



SERVICES FOR THE HANDICAPPED IN INDIA

This is the third book in a series written by the Taylors and published by the International Society. The earlier books were entitled "Special Education of Physically Handicapped Children in Western Europe" and "Services for Handicapped Youth in England and Wales".

"Services for the Handicapped in India" is a book which has long needed to be written as it brings together a wealth of information on facilities and services of all sorts, their development and discussion of needs. The book is well documented with some 500 references.

This book will serve as a ready reference to the professionally interested around the world; especially in India and the developing countries.

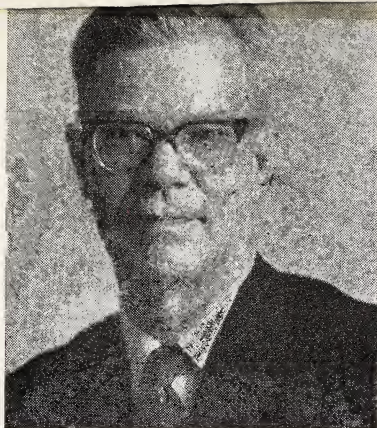
So often books are written about India by non-Indians with a certain bias, and certainly too often with a limited understanding of the problems. The Taylors have avoided all these and from their travels in India, discussions with workers in the field, studies and reading produced a book of unique value for everyone at all concerned or even just interested in the work for the handicapped in India.

There are, after Foreword, twelve chapters. The first is the Introduction which has four sections—general background, definitions, incidence and prevalence, and organization and administration. The following Chapters are: Child Welfare Services, Educational Services, Medical Services, Training and Employment Services. The Blind, The Deaf, The Orthopaedically Handicapped, The Leprosy Affected, The Mentally Retarded, The Emotionally and Socially Handicapped and the Summation which also covers the Role of Voluntary Societies and the Role of International Aid and Conclusions.

This is unquestionably a book which must be readily available to anyone dealing with the handicapped in India.



AMERICAN FOUNDATION
FOR THE BLIND INC.



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FOREWORD

Rehabilitation International is pleased to sponsor the publication of this third in a series of surveys of services for the handicapped in various parts of the world by Dr. Wallace W. Taylor and Dr. Isabelle W. Taylor. The previous volumes, also published under Rehabilitation International auspices, were *Special Education of Physically Handicapped Children in Western Europe* and *Services for Handicapped Youth in England and Wales*.

An important function of Rehabilitation International is the world-wide dissemination of information concerning services for the handicapped in the various countries, thus enabling individuals and organizations working with these problems to profit from the experience of others with similar concerns in other cultures and circumstances. Requirements in this regard encompass a wide spectrum of material, ranging from the technical details prepared by and for professionals such as physicians, therapists, and prosthetists, to more general surveys which have proved to be of great interest and value not only to professionals but also to volunteers, organizers of governmental and private service programs, and others. The present volume is in the latter category.

The Professors Taylor are well qualified by both training and experience to prepare this sort of survey, although they are the first to explain that they are not "experts" in the field of rehabilitation. Wallace Taylor is an historian and educator who teaches comparative education. Isabelle Taylor is a psychologist particularly concerned with child and adolescent psychology. He is Professor of Education and has been a member of the faculty of

the State University of New York at Albany since 1938; she is chairman of the Department of Psychology and has been a member of the faculty at Russell Sage College, Troy, since 1939.

Although highly competent and respected figures in their own professional fields, the Taylors' activity in special education has been as volunteers through Rehabilitation International. Their first work in this field was in response to the demands made by the World Commission on Special Education of the International Society for Rehabilitation of the Disabled for comparable data on the education of the handicapped in various countries, data that were needed to facilitate planning to ensure the best utilization of available resources and personnel. In preparation for their books they have devoted months of their time to field visits in the nations on which they have reported, to work with reference materials, to correspondence, to painstaking attention to rechecking their facts, and to the actual writing of the manuscripts. All this has been done without remuneration for their services and for only a small portion of their time with fellowship assistance from the Social and Rehabilitation Service of the U.S. Department of Health, Education, and Welfare. I draw attention to this fact in order to emphasize the importance of the role of the serious and dedicated volunteer in the rehabilitation movement and specifically in the work of Rehabilitation International which seeks with limited resources to stimulate and assist the development of services for the disabled throughout the world.

This present study of one of the largest of the developing countries is envisaged as only part of a broader survey of programs for the handicapped which is planned to encompass eventually all of the larger and many of the smaller countries in the Asian region. The Taylors have included a wide range of categories of handicapping conditions, age groups, and types of services. The amount of information available varies among the kinds of handicap and among the services provided in different localities even for persons with the same kind of handicap. Within these limitations, an attempt is made to present as complete a picture as possible of the situation of the handicapped in India.

Rehabilitation International firmly believes that adequate services for all people, whether or not they are handicapped, can help provide the solutions for the accelerating problems of our age. It is essential that the disabled be provided with opportunities which minimize their handicaps and enable them to become contributing members of society. This report on the efforts made in India to achieve this goal will assist those who are concerned to understand the importance of further developing facilities in that country and elsewhere in the world. We are most grateful to the Taylors for this additional and valuable contribution to the literature of the rehabilitation movement.

Norman Acton
Secretary General
International Society for
Rehabilitation of the Disabled

Chapter 1.

INTRODUCTION

GENERAL BACKGROUND

Services for the handicapped in India must be related to the country's general social welfare programs and to the fabric of the total society :

The problem of the physically handicapped in India cannot be studied without taking into consideration the socioeconomic background of Indian society as a whole. Factors like poverty, illiteracy, malnutrition, rural economy, unemployment and fatalism must be evaluated in relation to their impact on the problem of the physically handicapped (51).

India, the seventh largest nation in the world in area (1,220,000 sq. miles), is the second in population (520,000,000 in 1968). This population, 18% urban and 82% rural, is distributed among fifteen states and seven "Union Territories" (166). India has one-sixth of the world's population, but one-third of the total population in countries classified as "less developed." India became a nation in the modern sense of the term in 1947 as a result of the fusion of nine provinces and 600 autonomous princely states. It is :

. . . a country with more than 300 languages, fifteen major scripts, skin colors ranging from blue black to ivory white, six major social classes, hundreds of castes, thousands of sub-castes, eleven major religions, nine

major political parties, four major trade union movements, sixty-seven universities, and about two million college students (60).

India is also described as "in political fact, a group of countries with separate linguistic, military, ethnic, and dynastic histories" (60). The Hindu culture, the system of civil administration, and the Constitution are said to have provided the cohesive influence which enables this complex nation to function reasonably well as a unit.

In this agricultural country, where about 45% of the land is under cultivation, the average Indian farm has five acres of land, though many are smaller (464). More than half of the settled agricultural households among the tribes of India have holdings of less than $2\frac{1}{2}$ acres (58). The principal crops are tea, rice, cotton, jute, sugarcane, wheat, barley, millet, and oilseeds. The largest single industry is the manufacture of cotton textiles. There are mineral resources such as coal and iron ore, and two states produce oil (464).

India has a young population, with 42% below 14 years of age, and only 5% above 60 years (1966), as life expectancy estimates suggest :

	<i>Males</i>	<i>Females</i>
1951-60	41.89	40.55
1963 (estimate)	48.7	47.4
1968 (estimate)	53.2	51.9

Men live longer than women, contrary to the trend in western countries. Life expectancy is still 20 years less than in the U.S.A. (166), even though there has been a gradual increase in the average life span in recent years.

Among the major problems facing India are "a soaring population, a primitive agriculture, a labor force debilitated by disease,

a climate which makes sustained hard work almost impossible, a ruling elite that is both corrupt and feeble" (133,281). The rapid growth of the Indian population has outstripped the development of natural resources.

It took India hundreds of years, from the dawn of her history until the present day, to bring her population to 500 million. But if the population continues to increase at its present rate, another 500 million will have been added between now and the end of the century, i.e. in about 30 years. It is hard to imagine the gigantic investments needed to create a viable economy that would yield adequate reinvestments in the form of housing, hospitals and roads for a population that has doubled in size. Yet even if all the aid now available from the highly developed nations were devoted to India alone, it would still not be enough to meet present needs (453).

Public enthusiasm in India for social and economic development projects has declined from a high point in the mid-fifties. Many from the better educated classes have become disenchanted concerning what the government can do or even should attempt to accomplish in ameliorating the lot of the general population. There was at first preoccupation with planning for its own sake :

The temptation was very great to confuse wish with accomplishment, scheme with implementation, and allocation of money with completion of a project (233).

Later on, questions began to arise concerning the basic soundness of the programs envisaged, and the competence and honesty of those who were to implement them.

Improved conditions are, however, beginning to appear, as in the district of Ludhiana in the Punjab State, and Satara district in Maharashtra State where there is evidence of increased mechanization of farming, higher wages, better living conditions, and diminishing dependence on village-dictated customs and values that have tended to perpetuate undesirable practices (187,443).

Such changes are occurring slowly and sporadically in India as a whole, and it will take time for them to influence the overall problems of the country.

Complex and sometimes conflicting cultural attitudes and values affect the handicapped. For example, the Todas of India practise female infanticide but they consider it a sin to lay hands on the weakling and the deformed. There is no evidence in Indian history that there was any general practice of exposing and destroying handicapped infants as was true in many other primitive cultures. The Hindu religion stressed the value of charity, philanthropy, and mutual aid, but the doctrine of Karma has militated against the handicapped since it is believed that the handicap represents retribution for sins committed in a previous incarnation and therefore any effort to improve their lot would interfere with the workings of divine justice (52). There is thus continuing concern and perplexity as to the social and psychological implications of the Buddhist law of Karma, or the doctrine of reincarnation, in relation to the significance of handicapping conditions and antisocial behavior. On the other hand, Buddhism, like Jainism, stressed mercy and kindness and selfless service to all persons, including the handicapped. True Brahminism stressed the principle that a person could improve his lot through individual effort and thus even improve his horoscope.

Some of the less favorable current attitudes are those of (1) indifference or negligence resulting in some instances in deliberate exploitation of a handicap as in the case of beggars; and (2) non-selective humanitarianism, as manifested in the home and in the charitable institution. Philanthropy and religious zeal have been strong motivating factors in the establishment of many institutions for the handicapped, though "the individual donors or the sponsors of these organizations do it more with the idea of reserving a seat in Heaven than with that of ameliorating the conditions of the disabled" (331). One consequence of this attitude is that adequate information is not supplied by these institutions concerning rehabilitation programs and placement programs for their residents, to prepare the individual for an independent, normal life.

The average Indian family is usually ignorant of the true nature of a handicapping condition and what can be done about it, and therefore neglects the condition and assumes a fatalistic attitude toward it, thus fostering a sense of inadequacy in the handicapped person. On the other hand, the family that showers kindness and affection on the handicapped person may develop a sense of dependency in him or even a selfish, demanding attitude which produces irritation, angry reactions, and remorse in other family members. In turn the handicapped person may react with violent hostility. The social worker is an important agent here for providing a safe outlet for verbalization of fear and hostility and for educating family and the handicapped alike by giving insight into this situation (30).

Nutritional deficiencies, both quantitative and qualitative, cause handicapping conditions in India. Whereas the estimated daily requirements of an adult range from 2,400 to 3,000 calories, a former Director of the Nutrition Research Laboratories in Coonoor has estimated that the average Indian diet approximates only 1,750 calories, and lacks essential vitamins, minerals, fats, and proteins. Religious and economic factors dictate a vegetarian diet for large numbers of people. The extent of malnutrition is suggested by a Bombay Municipal survey in 1956-57 which revealed that of 42,472 public school children given medical examinations in that year, 83% suffered from some kind of ailment. A 1957 study in Surat conducted by the All India Women's Conference disclosed the fact that only 17% of the children less than five years of age were healthy, whereas the remaining 83% suffered ill health because of nutritional deficiency. A Poona survey by the Students' Health Association that covered the period from 1950 to 1957 showed that only a third of the school children examined were found to be fit (52).

The nutritional problems of Indian children are illustrated by the case of Khooki, a six-year-old girl living with her widowed mother in a shack near the railway line in Puddupukur, Calcutta, where there are no sanitary facilities. She attends a nearby primary school supported jointly by municipal and private funds. When a new center was inaugurated there of the Lutheran World Relief

Mobile Milk Canteen, Khooki and the other children were invited to the opening ceremonies. Not one of the 200 children present had ever had milk before. This program involves feeding a half-pint of milk and a slice of bread daily to each of a total of 3,555 children, using the services of 177 volunteers, many of whom are themselves young boys and girls. A clinic with medical services for sick children is also provided by this organization.

The city has a total of 3,219 "bustees" tenanted by more than 700,000 people. Almost all are undernourished and live on the verge of starvation. Almost 80% of the children do not attend school. Almost all the people suffer from water-borne and fly-borne diseases. Many have no homes at all and sleep on the streets and sidewalks. The municipal government is trying to bring these people out of their squalid living conditions, but progress is understandably very slow, and in the meantime voluntary efforts such as that described are very important (138).

The incidence of mental retardation in India may be due in part to problems of malnutrition. In the child the brain reaches 80% of its adult weight by the age of three, whereas the body reaches barely 20% of its adult weight by that age. Nutrition is, therefore, a matter of critical concern particularly during the first three years of the child's growth. Dr. Moises Behar, director of the Institute of Nutrition of Central America and Panama, calculates that 300,000,000 children in the world are in danger of impaired brain growth resulting from nutritional deficiencies, since the great majority of young children in the lower socioeconomic groups of developing countries show a decreasing rate of growth after the first few months of life. Studies conducted in Mexico and Guatemala underscore the relationship between learning capacity and nutrition as shown for example by the poorer intersensory integration demonstrated by the smallest children in a Guatemalan village as compared with the tallest (397).

Many examples can be cited of the social customs, habits, beliefs, and taboos that contribute to malnutrition even when adequate foods are available. In one Indian village nearly 90% of the mothers breast-fed their infants beyond the age of one

year, a few beyond the age of three, without giving them food supplements. In this village mothers avoid eggs and fish during pregnancy and after labor, and do not permit their children to eat green vegetables lest these give the children "green diarrhea." Thus the problem of malnutrition is not a simple matter of a lack of food. A widespread program of public education concerning nutrition is of vital importance (411).

The services provided for the handicapped in India must, therefore, be viewed in the light of the special conditions and problems found in the country as a whole : rapid population growth that continues to outstrip increases in production; a predominantly rural population just beginning to feel the dislocations and uneasy changes caused by gradual industrialization and cityward movement of people; difficulties of transportation and communication related to the very size of the country and the barriers of divergent customs, beliefs, and languages; attitudes of fatalism imposed by caste and sex; and widespread poverty and malnutrition.

DEFINITIONS

Carefully drawn and generally agreed upon definitions are essential to a meaningful discussion of social problems. The handicapped in India, and efforts to move toward a solution of their problems, suffer from a lack of such clearcut definitions. Who is blind? Who is deaf? What is meant by the "partially hearing"? Which persons are mentally retarded and which are mentally deficient? Questions such as these need to be answered in various ways: in legal terms to determine eligibility for and the appropriateness of educational opportunities and job training; in medical terms as a basis for determining treatment and the planning of treatment facilities; and in social welfare terms to determine the assistance programs needed.

Important as these definitions are, they cannot be provided by legislative fiat. They must emerge as a result of the extension of knowledge among the professional and educated classes, and from them to the general citizenry, as services develop which give meaning to the terms as they are understood by the people who use the services and benefit from them.

Accurate data are difficult to obtain even to determine the extent of the problem of the handicapped in India, partly because of the lack of clearly stated, official, and widely adopted definitions. Where published statements concerning specific handicapped groups or the handicapped in general appear, there is usually no specific indication of the precise characteristics of the members of the group or of its dimensions. Only a few examples can therefore be cited where investigators have attempted to delineate the characteristics of the category with which they are concerned. Even government documents referring to the blind,

deaf, mentally handicapped, and orthopedically handicapped have these limitations.

The term "rehabilitation" itself is often used in a very limited way. According to the definition adopted by the International Labour Conference in June, 1955, rehabilitation means "the restoring of handicapped persons to the fullest possible physical, mental, social, vocational, and economic usefulness of which they are capable." Total rehabilitation in this sense, as understood throughout the modern world today, has received only limited attention from the public and from the medical specialists in India, and then only recently, for rehabilitation is often considered to be medical treatment or cure with little or no regard for its educational, social, vocational, and psychological aspects. The more comprehensive definition is now appearing with increasing frequency, especially in conferences devoted to rehabilitation. In most countries the term rehabilitation has meant the restoring of physically handicapped persons to useful and productive roles in society, but in India the word has more often had a "refugee" connotation and has designated the economic relocation and return to economic productivity of "normal" displaced people from Pakistan, Burma, and Ceylon (294).

Reference may be made to WHO definitions of the blind and the deaf, but an examination of specific data cited in Indian reports at times indicates that these are actually used in a different sense. In some instances only the totally blind (those who cannot distinguish any light) and the totally deaf (those without residual hearing) are being considered. The terms "partially sighted" and "partially hearing" are not part of the vocabulary, which is to be expected when these groups have as yet to be identified and provided for. It is common to refer to the deaf-mute as if it were assumed that muteness always accompanies deafness, and yet in some of the Random Sample surveys conducted at the request of the central government, three categories of deaf, deaf-mute, and mute or dumb are used. The Training Centre for the Adult Deaf established by the central government at Hyderabad defines as deaf those in whom the sense of hearing is non-functional for the ordinary purposes of

life, which would normally mean a loss of 70 decibels or above by air conduction in the better ear. Admission to the Training Centre for the Adult Blind at Dehra Dun is based on a definition of the blind as those who have (1) no sight at all or (2) visual acuity not exceeding $3/60$ or $10/200$ in the better eye with correcting lenses (361). This definition, adopted by the central government, represents the first two parts of the definitions recommended by the World Council for the Welfare of the Blind (467. 468).

In the description of the eligibility requirements for the scholarships provided for physically handicapped students by the Government of India Department of Social Welfare, the following definitions of the blind, deaf, and orthopedically handicapped are used (151):

Blind: those who suffer from (1) total absence of sight or (2) visual acuity not exceeding $3/60$ or $10/200$ (Snellen) in the better eye with correcting lenses.

Deaf: those in whom the sense of hearing is non-functional for the ordinary purposes of life; generally a loss of 70 decibels or above at 500, 1000, or 2000 frequencies will make residual hearing non-functional.

Orthopedically handicapped: those who have a physical defect or deformity which causes an interference with the normal functioning of the bones, muscles, and joints.

Although in this particular case the term "physically handicapped" includes the blind, deaf, and orthopedically handicapped, it is more frequently used to connote only the orthopedically handicapped or those with neuromuscular disabilities. This is understandable because definitions come into use to meet specific needs, and since blindness and deafness and leprosy (in its later stages) are easily recognized, and since special associations had been formed for the promotion of their welfare, it was logical that when the term "physically handicapped" came into use it usually referred to groups other than the blind and the deaf.

This more limited use of the term "physically handicapped" is the implied definition used in much of the literature (52). The Association of the Physically Handicapped, Bangalore, includes as members all persons who have either completely lost the use or can make only a restricted use of physical organs, and while this might be interpreted to include the organs of sight and hearing, in practice the blind and the deaf are not eligible to join. This association further defines the orthopedically handicapped as persons who have defects which cause deformity or an interference with normal functions of the bones, muscles, or joints (30). A similar definition states that the category of the orthopedically handicapped includes all those who have a condition which prevents them from having complete control of their muscles and the nerves which in turn control their ability to move about and use their limbs in a normal way. This definition includes those with polio effects, cerebral palsy, amputations resulting from accident or disease, birth anomalies, hemiplegia, muscular dystrophy, and spina bifida (319).

The physical limitations sometimes imposed by leprosy, especially in advanced stages, dictate that many if not all persons suffering from this disease could be described as orthopedically handicapped. Yet this term as used by Indians never seems to include them, probably for historical and cultural reasons. In fact, until recently leprosy-affected persons have received even less care and service on the whole than any other group of the handicapped.* Incidentally, rehabilitation workers are trying to avoid using the stigmatizing appellation of "leper" and to refer instead to a leprosy patient, a leprosy-affected person, a person with leprosy, or a person with Hansen's disease.

Somewhat broader definitions of the handicapped were given in a pre-independence report of the Central Advisory Board on Education. Physically handicapped children were classified into three main categories: (1) those deficient in one or more of the senses such as the blind, the deaf, the blind and deaf, deaf-

* Because leprosy is treated separately in Indian writings and because it is such a serious problem in India, it is discussed apart from the orthopedically handicapped in this report.

muters, etc.; (2) those retarded by motor deficiency, including respiratory, heart, and orthopedic cases; and (3) those defective in speech. Mentally handicapped children were classified into two groups: (1) those born with intelligence below the average; and (2) those who are "backward" because of maladjustment or physical ailment causing temporary retardation. The mentally handicapped were further classified in terms of I.Q.: (1) the "dull" with IQ's between 70 and 85; (2) the "feeble-minded" with IQ's between 55 and 70; and (3) "imbeciles" with IQ's below 55 (394).

The terms "mentally handicapped," "mentally deficient," "mentally defective," and "mentally retarded" are often used interchangeably, without any clear specification in terms of IQ or other objective criteria. Clinically the term "mentally retarded" may refer to a diverse group of individuals who constitute a social problem because of subnormal functioning or malfunctioning of their minds. It has also a connotation of reversibility. Experts in the World Health Organization and other groups prefer a distinction between the terms "deficiency" and "retardation." In the mentally deficient or "aments" the mental subnormality is attributable primarily to a demonstrable defect of brain structure or chemistry, whereas in the mentally retarded the malfunction is the result of learning deficiencies resulting from unfavorable environmental influences (368). Such a limited use of the term "mental retardation" conflicts, however, with the implied meaning of the term as it is used in many Indian publications.

The distinction between irreversible and alterable causes in identifying the mentally retarded is implicit in definitions given in the important 1966 report on education from the Ministry of Education. Here backward children are classified in terms of two major causes: (1) mental handicap or low intelligence arising from heredity or congenital factors, disease, or injury; and (2) under-achievement or inability to perform up to the level of one's intelligence because of such factors as emotional conflict, lack of motivation, poor study habits, cultural deprivation or economic handicaps. The mentally handicapped are classified into four

groups: (1) idiots, (2) imbeciles, (3) educable mentally handicapped morons, and (4) the dull or slow learners (150). The terminology used for the first two groups is that used with Terman's original version of the Stanford Binet scale, a set of terms seldom used today in western countries. The first three groups, with IQ's below 75, are assumed to be incapable of benefitting from education in regular school classes, but the dull or slow learners simply learn at a slower pace and must be given more individual attention, special remedial help, and possibly also a modified curriculum, adjustments that in many countries like the U.S.A. are now being made also for youngsters in the 50-to-75 IQ range in special classes. (Fortunately some shifts are now occurring in the direction of education for these groups in India.)

A special government school in New Delhi has been named as one for "mentally deficient" children, though actual admission practices indicate that the term "mentally retarded" as commonly used in other countries is implied. Admission is based on a definition of mental deficiency as social incompetency due to intellectual abnormality which has been developmentally arrested; is of constitutional origin; obtains at maturity ;and is essentially incurable (79).

As provisions for the handicapped broaden in scope, and as better coordination of these provisions occurs, one can expect more explicit definitions to be generally adopted by the public and private agencies concerned.

INCIDENCE

In general, there is considerable variation among estimates of the incidence of different handicapping conditions, because of lack of agreement on definitions, differences in samples used as the basis for estimates, and lack of trustworthiness of data derived from extrapolations based on rates for other countries. In India, where conditions often vary considerably from one section to another, these figures must be used with caution. However, agreement on incidence figures at this point in the development of special programs for the handicapped is less important than agreement on the goals of these programs and on a system of priorities in their establishment.

There are as yet no official state or national arrangements for a systematic collection of statistical data on the handicapped in India. It has been proposed that this be done in the future in cooperation with village government councils (448). The 1931 census made some reference to the blind, deaf-mute, leprosy-affected, and the insane, but the orthopedically handicapped were not even mentioned at that time (52). This attempt was discontinued because of the difficulty of arriving at definitions which could be easily used by the census-takers, and because of the problems of ascertaining the extent of a given handicapping condition on the basis of these definitions (187).

There is generally difficulty in agreeing upon definitions and estimates of various categories of handicap. The deaf and hard of hearing, for example, have everywhere presented especially complex problems in terms of classification and measurement.

as indicated by the fact that in the U.S., findings from actual tests of school children have ranged from 2% to 21% with defective hearing, and authorities have variously estimated the number of deaf persons in the U.S. from one in 700 to one in 2,500. Important prerequisites to the collection of accurate data are standardized testing conditions, equipment, and records; generally accepted definitions and terminology; and valid hearing and language tests (89). A current government-sponsored study in the U.S. is aimed at providing a suitable basis for collecting data concerning the deaf in the 1970 census, the first such effort made by the Bureau of the Census since 1930.

Variations in estimated totals of the handicapped in India depend in part of course on the range of handicapping conditions included and the definitions used in determining these conditions. One 1950 estimate of 3,500,000 persons in India with disabilities of some kind was less than half that made by Health Minister R. Kaur on the basis of a 20-per-1,000 estimate for the U.S. The total should show a marked annual rise, for with an annual increase of 2.5% in the general population, one can expect about 500,000 disabled persons to be added yearly to the existing total, estimated at 20,000,000 (414).

Some basis for making more accurate estimates was established at the beginning of the Second Five Year Plan when the central government started a series of random-sample surveys in different urban areas, which were followed by a few rural surveys conducted by the National Sample Survey of India. But even the latest census (1961) did not include any specific information about the handicapped population (and while estimates of the blind and deaf have appeared from time to time, there have usually been no corresponding ones for the orthopedically handicapped, even though many experts agree that this group undoubtedly outnumbers groups like the blind and the deaf) (52). Recognition that an important first step in providing services for the handicapped was the securing of more accurate information about the number and nature of handicapping conditions, led to the surveys that began in 1956 (448). In 1955 the Ministry of Education set up the Central Advisory Council for

the Education of the Handicapped, the groups included being the blind, deaf, mentally retarded, and orthopedically handicapped. Sub-committees were established, as a result of which several surveys were made, among which are the following* :

Bombay, 1957: conducted by the All India Occupational Therapists' Association. *Delhi*, 1957-1961: conducted by the Delhi School of Social Work. *Kelod*, 1960: conducted by the Department of Preventive Medicine, Medical College, Nagpur. *Kanpur*, 1962: conducted by the School of Social Work, Agra University. *Bangalore* 1963-64: conducted by the Association of the Physically Handicapped. *Nagpur*, 1966: conducted by the Nagpur Association for Rehabilitation of Children with Orthopedic Disabilities.

A pioneering project in establishing procedures for an accurate collection of data concerning the incidence of the handicapped was the 1957 Bombay Random Sample Survey of the Handicapped conducted by the All India Occupational Therapists' Association on behalf of the Central Advisory Council for the Education of the Handicapped (57). The blind, deaf, mentally retarded, and orthopedically handicapped were studied since some services were available for them at that time. Other groups were excluded because there were no services to which they could be referred. This survey was based on the earlier work done in a Bombay Economic Survey undertaken by the School of Economics in the University of Bombay at the request of the central government, to collect economic and social data by questionnaire from the families in a sample 3% of the total tenements in Greater Bombay. The names of the families included were selected from census reports, ration cards, and electoral registers. Among the 19,000 households visited by their investigators, 439 were listed as having handicapped members. These families

* Although reference was found to a 1956 Surat survey conducted by the Surat Branch of the All India Women's Conference, the only report obtainable was one discussing a 1957 survey made by this group concerning children's health. Other surveys undertaken within Maharashtra state, such as the 1960-61 Poona survey, are reported.

were visited and interviewed by one of the seven occupational therapists and three physical therapists who conducted the survey.

One of the householders wanted to know which family we were interested in. It seems that he had three wives and three families living in three different places but he was finally convinced that information about the family at that address met our requirements (57).

Those interviewed who were willing were taken to special Sunday Clinics staffed with paid professional personnel, where they were given treatment. The therapists personally directed the bus drivers in collecting the patients for the clinics and returning them home. Half the persons interviewed actually attended the clinics.

A total of 430 families was visited but data were available for only 319 of them. As there were two handicapped persons in each of 27 families, the total number of handicapped family members was 346. Of these handicapped persons 17 had double handicaps, and three had treble handicaps, giving a total of 369 handicapping conditions that were reported:

83 blind or visually handicapped

44 deaf

28 deaf-mute

10 dumb (3 had only a speech defect)

126 orthopedically and neurologically handicapped

55 mentally ill and mentally retarded

The United Nations definition of the blind was used, and three categories were listed: the blind, those with travel vision, and the one-eyed, of whom there were 20, 3, and 11 respectively. Among the orthopedically handicapped, congenital defects, cerebral palsy, and traumatic crippling were evenly divided in the 51% of the total that they constituted. Crippling due to infection was the largest single group (nearly 30%).

The total survey gave a rate of 3.5 handicapped persons per 1,000 of the general population—0.9 visually handicapped, 0.4 deaf, 0.4 deaf-mute and dumb, 1.36 orthopedically and neurologically handicapped, and 0.6 mentally ill or mentally retarded. The report included a detailed discussion of the bases for selecting a suitable staff for diagnosing and classifying the various forms of handicap. Data were summarized as to the age and sex of the 346 handicapped persons included in the study, the causes of the handicapping conditions, duration of the handicaps, the treatment received, educational level, and employment status, first for the group as a whole and then for the 164 who actually came to the clinics. This was the most detailed study of this kind made in India up to that time.

A similar survey of physically and mentally handicapped persons was undertaken in the Greater Delhi area by the Delhi School of Social Work at the request of the central government (264). The project was initiated in 1957 and the results published in 1961. Like the Bombay investigation, the study was carried out in two stages; in the first, the purpose was to determine the nature and types of handicaps, causes, duration, treatment secured, and data on the families of the handicapped. In the second stage, a team of medical and educational experts determined the nature and possibilities of treatment and rehabilitation for those identified in the first stage of the survey. The categories classified were the blind, mute, deaf, persons having other physical handicaps, mentally handicapped, and persons with multiple handicaps. The blind included the partially sighted as well. The sample population used were the 209 households found to have at least one handicapped member out of 113,853 such households surveyed earlier by the Delhi School of Economics. The total number of handicapped persons studied was 221.

The percentages of different kinds of category were: blind, 38%; mute 6.33%; deaf 9.95%; persons with other physical handicaps, 25.33%; mentally handicapped, 12.66%; and persons with multiple handicaps, 7.70%. Thus the largest single group were the blind. In the total group, 55% lived in joint or extended family groups and 45% in unitary or primary family groups. About 57% were heads

of their respective families. About 18% were below 21 years of age (6% below 10 years of age, and 10% 11-20), and 68% were either married or widowed or separated or divorced (though only one each in the last two categories). There were three major languages represented: 78% Hindi, 10% Punjabi, and 11% Urdu. In terms of causes of the handicap, 20% were congenital, and 18% resulted from illness. About 71% had suffered the handicap for more than three years.

On the basis of the Bombay sample, the Director General of Employment for the central government estimated in December 1959 that there was a total of 8,832,000 handicapped persons (2.3% in India in 1956). Based on the Delhi survey, an estimated total of 13,440,000 (3.5%) was obtained for the same year. The discrepancies between Indian estimates and rates cited by other countries are probably in part a product of variations in the definitions used in studies of the handicapping conditions.

The sample survey of the handicapped in Kanpur was organized by the Director of the Institute of Social Sciences at Agra University. The groups included were the blind or visually handicapped, the deaf and the deaf-mute, and the orthopedically handicapped. A random sample of 2% of the houses in the area to be studied was covered by the inquiries. After the initial interview, the persons were taken to the Hallet Hospital for a thorough examination. Out of 523 persons interviewed, 514 had one handicap and 9 had two handicaps, providing a total of 532 handicaps. Most of these persons (458 or 88%) also came from families in which they were the only handicapped member. The largest number of handicaps was orthopedic (231 or 44%), followed by blindness (174 or 33%). Nearly half the handicaps were found in youngsters up to 18 years of age; in fact, a third of them came in the age group below 12 years. The major cause for blindness was smallpox. Most handicaps resulted from illness (58%), followed by congenital difficulties and accidents. Over 58% of the cases were chronic, because of lack of medical treatment and unhealthy living conditions; in other words, most had had the handicap for more than three years. Two-thirds of the persons interviewed were illiterate (in contrast to the 15% reported in

the Bangalore survey), for the report indicated that parents rarely thought in terms of education for their handicapped children (390).

In the Bangalore survey, the Association of the Physically Handicapped studied a population of 184 persons (146 males and 38 females), of whom 75 were institutionalized and 109 were living with their families. Interviews were conducted by post-graduate students of the National Institute of Social Sciences. There was a high concentration of persons in the age group 11 to 15 (44 persons or 24%), for both males and females. A total of 101 persons (55%) was below 25 years of age. There were 33 (18%) in the 16-to-20 age group. Only 27 (15%) of the 184 were illiterate; 52 had a middle-school education; 53 had either finished or were studying in high school classes; 15 had reached the college level and 6 the post-graduate level. Of the institutionalized group in the Red Cross home for ex-servicemen, 46 had been soldiers before the onset of the handicap. Of those living at home, 24 were employed and 66 were students. The families of the institutionalized were on the average poorer than those where the handicapped person was living at home. Illness most frequently caused the handicapping condition except for the 53 ex-servicemen. Congenital deformities accounted for 10% of the male cases but 24% of the female, and even omitting the 53 ex-servicemen, the male percentage was still less than the female (16%). In most cases only the lower extremities were affected, the hands and fingers being normal. The degree of impairment in the lower extremities was greater among the institutionalized. Most had had the handicap for more than three years (30).

A 1960 survey sponsored by the Central Advisory Council for the Education of the Handicapped focussed attention on a smaller community, the village of Kelod with a total population of 5,000, about equally divided between males and females. This survey represented an attempt to measure the dimensions of the problem of caring for chronically ill and disabled persons which is faced by governmental agencies. About two-thirds of the families were engaged in agricultural activities. The infant mortality rate was 142 per 1,000 live births. Half of the population had one

or more defects or diseases. There were 59 cases of leprosy, of which a third involved some deformity. About 7% of the disorders and defects were found to be congenital in origin. Diseases and defects of the eyes had a high incidence.

Rate per 1,000 population:

Blind and visually handicapped	8.0
Orthopedic and neurological	6.4
Deaf (plus deaf and mute)	5.9 (80 db. and above)
Minor speech defect	1.4

The overall incidence of the physically handicapped was reported to be 21.7 per 1,000.

A survey of the physically handicapped in Maharashtra State, in both rural and urban areas, was conducted during 1960-61 by the Director of the Bureau of Economics and Statistics. The field work consisted of interviews by the trained investigators of the Bureau of a selected sample of households from the coastal, inland, inland central, and inland eastern districts, including 288 villages and 192 urban blocks in Maharashtra State. Definitions of the groups studied were as follows:

Blind: one who cannot see for all practical purposes, being blind in both eyes.

Deaf: A person who cannot hear for all practical purposes, being deaf in both ears.

Dumb: one who cannot talk.

Lame: a person who is disabled or deformed in either of the legs.

Leprosy-affected: one who suffers from leprosy.

Crippled: a person, other than a leprosy-affected, who is deformed in any part of the body and is disabled thereby.

Temporary physical handicaps were not considered.

It was estimated that out of 7,027,594 households in the state, there were about 77,000 households having at least one physically handicapped member. Of these, 70,000 (or about 90%) were rural households. The total number of the physically handicapped was estimated at 81,000, of which 90% or about 73,000 were found in rural areas; on the average there were 23 such persons for every 10,000 of the general population in the state, with 29 in the rural areas and eight in the urban. Estimates for the various categories of the handicapped were:

Blind:	28,000 (35% of the total physically handicapped)
Deaf:	10,000
Dumb:	10,000
Lame:	12,000
Leprosy-affected:	20,000
Crippled:	4,700

A more recent survey of the disabled was one undertaken in 1966 by the Nagpur Association for Rehabilitation of Children with Orthopaedic Disabilities (NARCOD) in 42 wards of the city of Nagpur comprising 11% of the population. This project was assisted by what was then known as the Vocational Rehabilitation Administration of the U.S. Department of Health, Education, and Welfare. The medical screening of pupils in 25 primary schools provided the following data on types of handicaps discovered:

Orthopedic and orthoplastic	39
Poor vision and conditions leading to visual defects	147
Poor hearing and conditions leading to hearing defects	129
Speech defects	146
Dental defects	22
Poor school progress	54
Poor health due to other reasons	53
<hr/>	
Total	590

A 1967 report on services for the handicapped in Maharashtra State pointed out that although 91% of the handicapped are found in rural districts, only 72% of the general population live in those areas. As industrialization proceeds, more physical handicaps are resulting from traffic and industrial accidents in addition to diseases and congenital causes (370).

Another more specialized study revealed the relatively high incidence of handicaps among beggars — 46% of those in government and private institutions in one state had physical or mental handicaps. In 1963-64 a study was made of the beggars' homes established in Maharashtra State under the Bombay Prevention of Begging Act, 1959. Large numbers of the beggars were found to be handicapped in some way other than by age and general infirmity:

	Government Institutions	Private Institutions
Number of institutions	11	12
Total number of inmates	3,670	685
Blind	120	100
Deaf	110	0
Orthopedically handicapped	70	300
Leprosy-affected	650	175
Tubercular	170	20
Mentally handicapped	300	0
Total number of handicapped	1,420	595
Percentage of all inmates	39%	87%

In addition three "government certified institutions" were listed, which were mental hospitals for which the patients were indicated as "lunatic cases" with no numbers of beggars specified. One government home in Nandurbar for 100 persons listed 70 orthopedically handicapped persons of ability and 30 able-bodied, while a private home in Bombay for 300 persons listed the entire 300 as orthopedically handicapped persons with good I.Q. and mechanical aptitude.

Other evidence of the nature and number of handicaps comes from school medical examinations. Out of 129,887 children given medical examinations in the municipal schools of Greater Bombay in 1965, 107,979 were found to have defects of some kind, giving a total of 246,063 defects, with the following percentages for various kinds of defect (410):

General debility	65.30%
Dental (Mouth and teeth)	51.76
Enlarged glands	37.73
Throat	35.56
Nose	10.07
Eye (external)	6.91
Ear disease	5.52
Skin (contagious)	5.46
Other diseases	4.31
Eye (vision)	1.74
Deformity of bones and rickets	1.34
Lungs and tuberculosis	1.08
Heart circulation	1.01
Spleen	0.07

A report from the Directorate of Social Welfare for Maharashtra State for the period 1961-66 gave incidence figures for handicapping conditions in the light of some general information about the state (132). Maharashtra has a total population of nearly 40,000,000, and as indicated earlier, 72% of this population is classified as rural, although 91% of the handicapped persons live in rural areas. The literacy rate is estimated to be 30%, and per capita income 390 rupees a year (about \$ 50). Employment is primarily in agriculture (4,500,000) but the number employed in factories is steadily increasing (800,000). It is estimated that there are 81,000 disabled persons in this state, divided as follows:

Blind	28,000
Deaf and dumb	20,000
Crippled	13,000
Leprosy-affected	20,000

Artificial limbs and appliances supplied by the Directorate rose from 10 out of 72 requests in 1962-63 (the first year such appliances were provided to 27 out of 154 applications in 1965-66. In the period from 1961-62 to 1965-66 the number of orthopedically handicapped in special institutions rose from 128 to 310, and the number of special schools from 4 to 7 (333).

Recent estimates have been given for the number of children between 6 and 14 years of age in the country as a whole who have various kinds of handicap, though the basis for these estimates was not indicated (146, 162):

Blind	447,000
Deaf	223,500
Orthopedically handicapped	500,000
Mentally handicapped	1,500,000 to 1,800,000

While estimates of the numbers of handicapped persons vary, there is usually closer agreement on the number of the blind than on others, as indicated by figures provided by two government sources (185,186):

Blind	4,000,000	4,000,000
Deaf	1,250,000 to 1,500,000	2,000,000
Orthopedically handicapped	2,500,000 to 3,000,000	3,000,000 to 14,000,000
Mentally handicapped	4,000,000 to 10,000,000	6,000,000 to 10,000,000

The greatest discrepancies are found in the categories of the orthopedically handicapped, which may in part reflect the fact that attention to these groups and special provisions for them have appeared later than for the blind and deaf.

Both traffic and industrial accidents can be expected to increase in India as the process of industrialization accelerates. In the period from 1951 to 1959, 20,935 cases of industrial accidents were registered in Bombay alone under the Workmen's Compensation Act, and of this total 12,235 resulted in permanent disability. During 1959, a total of 76,227 cases was registered for

the whole of India, of which nearly 7% resulted in permanent disability. There is evidence that in contrast to the decreasing rates in some western countries, the rate of industrial accidents is increasing in India from year to year, and the accident rate is as high in the smaller towns as in the larger cities. Similarly traffic accidents have increased alarmingly as a result of traffic congestion combined with poor systems of traffic control and heavy vehicular traffic in roads and streets designed for carts and bicycles and pedestrians. In Greater Bombay alone, in the period from 1950 to 1961 the Traffic Control Department recorded 228,785 traffic accidents, of which 3,046 were fatal. In recent years railway accidents and air crashes have also increased (52).

Disabilities resulting from other kinds of accidents vary somewhat from one locale to another. In mountainous regions accidental falls are common, while animal bites and insect bites are common in forests and villages.

Diseases associated with the aging process are less common in India than in western countries because of lower longevity. For example, in 1951 persons above the age of 55 constituted only 8.3% of the general population. But as living standards improve and longevity increases, an increase in incidence of such ailments as arthritis, rheumatism, heart disease, and cancer can be expected. Tuberculosis of the bones and joints and deficiency diseases like rickets are more prevalent in India, whereas in the West cerebral palsy and amputations are more common (52). Polio, once reported as of higher frequency in western countries, may now actually be higher in India. The use of vaccines has rapidly brought it under control in more highly developed countries, while polio cases continue to represent a large proportion of the cases of crippled children in India for whom services are being provided. Of the patients treated and discharged from the Government Home for Crippled Children in Nagpur between 1963 and December 1967, 14 of the 28 residential cases were post-polio, as well as 17 of the 25 day pupil-patients (196).

The incidence of polio is likely to rise rather than to decrease in view of evidence that polio is on the increase in 44

tropical and semitropical countries in Africa, Asia, and Latin America as contrasted with dramatic decreases in 21 European countries plus Australia, Canada, New Zealand, and the U.S.A. Polio remains an infantile disease in warm countries, the majority of cases being found among children under five years of age. Vaccination in itself is not necessarily the solution, or at least as effective a solution, in tropical countries, since the proportion of children developing antibodies after vaccination can be as low as 30% in comparison with the more usual 90% in temperate climates. An increase in the incidence of polio is expected whenever the infant mortality rate in a country falls below 75 per 1,000 (349).

Other disabling conditions found in western countries which occur much less frequently in India include multiple sclerosis and muscular dystrophy, which are said to be very rare in India as in other Asian countries. In the case of muscular dystrophy, this may only seem to be true, since little is done for persons so afflicted, and those with the type appearing in childhood usually die at an early age (187). Some handicapping conditions which are practically non-existent in western countries loom large among the health problems of India, as in the case of leprosy. Blindness, though found in all countries, is a much more serious problem in India. Any marked change in the present incidence of various types of handicap in India will probably be related to improvements in social and economic conditions.

ORGANIZATION AND ADMINISTRATION

Although India is a land rich in traditions for the care of the handicapped, as illustrated by many acts of charity reported in mythology and in history, a planned approach on a national and scientific basis did not appear till 1945, after the submission of the Report of the Post-War Development Plans. No government action concerning services for the disabled was taken until India became independent; before this time voluntary bodies had provided the only services available. The first Five Year Plan shifted emphasis from charity to rehabilitation. In the Second Five Year Plan, education and employment of the physically handicapped were stressed, with beginnings such as scholarships for handicapped students and a plan for establishing special employment exchanges for the handicapped. The Third Five Year Plan encouraged the development of facilities for vocational training, expansion of employment opportunities for the handicapped, and coordination of public and private efforts along these lines. Central and state governments have taken an increasingly active part in solving rehabilitation problems, although administrative responsibility for present rehabilitation services continues to rest primarily upon voluntary groups.*

The Constitution of India establishes the principle that the disabled are entitled to the same rights and privileges as other citizens, but no specific legislative provisions are made concerning rehabilitation services. Two laws, however, do make specific provision for disabled workers: (1) the Workmen's Compensation Act of 1923 which states that any person earning a maximum of

* An excellent summary of legislative and administrative provisions related to rehabilitation of the disabled was published in 1964 by the United Nations Department of Economic and Social Affairs. (448)

400 rupees is entitled to compensation for injuries suffered in connection with employment, whether the disability is temporary or permanent, partial or total; (2) the Employees' State Insurance Act of 1948. The first law says nothing about vocational rehabilitation, and the compensation is inadequate for a worker unemployed because of his injury (448). The employees' State Insurance Scheme was introduced in 1952 in Delhi and Kanpur to provide for medical costs for industrial workers; it includes sickness benefits, maternity benefits, and disability benefits. It is planned to include hospitalization and midwife costs in the future. The first Factories Act in 1881 set lower and upper age limits for children's employment as well as their hours of work. After a series of amendments, a new Act in 1948 introduced regulations concerning working conditions of employees in general such as overcrowding, sanitary arrangements, and maternity benefits (51).

Among the Directive Principles laid down by the Constitution, Article 38 emphasizes the obligation of promoting the welfare of the people; Article 39 asserts that citizens have the right to an adequate means of earning a living, and children and youth must be protected against exploitation and against moral and material abandonment; and Article 41 asserts that the State shall, within the limits of its economic capacity and development, make effective provision for securing the right to work, to education, and to public assistance in cases of unemployment, old age, sickness, and disability and in other cases of undeserved want.

Another type of legislation dealt with the prevention of accidents. An 1881 Factories Act was amended several times before 1948, when a new Act specified certain regulations governing the working conditions of employees. Other laws with similar purposes have been the Plantation Labour Act of 1951 and the Mines Act of 1952. Since the incidence of industrial accidents is higher in India than in western countries, the Government of India has undertaken a thorough study of the causes of accidents in certain factories, and a standing Advisory Committee considers measures for reducing the frequency of such accidents (448).

To provide the consultation with experts that was needed in developing such services, the Government of India set up the National Advisory Council for the Education of the Handicapped in September, 1955. This group advises the government concerning provisions for the physically and mentally handicapped, and coordinates the rehabilitation work of voluntary organizations. (Similar advisory councils have been formed at the state level.) The Secretariat of the Department of Social Welfare in New Delhi is the headquarters for this council, which is concerned with the education, training, and rehabilitation of all groups of physically and mentally handicapped persons—blind, deaf, orthopedically handicapped, and mentally retarded. The body consists of between 80 and 90 persons appointed on the basis of recommendations from the Ministry of Education, with the purpose of making plans to be incorporated into the government's Five-Year Plans. The group meets usually every year or year and a half. (This Council eventually sponsored three random sample surveys of the handicapped in Bombay, Delhi, and Kanpur.)

The central government has also sponsored nation-wide meetings which have drawn attention to the needs of the handicapped, and considered the possibility of special legislative provisions for them. The Government of India held during 1955-56 three Seminars on the education of the blind, education of the deaf, and employment of the blind respectively, and used suggestions emerging from these Seminars in describing programs for the handicapped in the Second Five-Year Plan (448). At the government-sponsored First National Seminar and First National Exhibition on the Training and Employment of the Physically Handicapped held in Bangalore in 1961, the possibility of central and state legislation relating to disabled persons was discussed (51). It was decided to defer such legislation until all other possibilities had been explored. The first executive action concerning employment of the disabled was taken by the Directorate-General for Resettlement in the Ministry of Labour, by establishing regional employment centers and special placement officers (448).

The original work with the handicapped came under the jurisdiction of the Ministry of Education, but after much discussion

and several different recommendations, it was placed in turn under the Ministries of Law, of Social Security, and of Social Welfare. It has sometimes been difficult to determine which department now has which responsibilities for the handicapped.

All projects for the handicapped (blind, deaf, mentally retarded, and orthopedically handicapped) are financed in one of five different ways:

1. The project is run by the central government—directly financed and operated—such as the center for the adult blind and the center for the adult deaf.
2. The Government of India (the central government) gives a grant to be matched by the state social welfare and health departments. The state may run the project by itself or assist a voluntary agency.
3. A voluntary organization gets a direct grant from the state (taken from central government funds) or directly from the central government with the approval of the state government. The voluntary group may apply for a central government grant through the state government, thus getting a direct central government grant via the state.
4. An individual or voluntary society may operate a private undertaking without any governmental involvement, possibly financed with gifts, donations, and trusts. The organization may apply later for government funds after the operation becomes a going concern. The Lions and Rotary Clubs have been very helpful regarding the blind, and are now becoming interested in the mentally retarded as well.
5. The municipality finances and/or operates programs for the handicapped (187).

The Ministry of Education makes a number of specifications concerning the basis for grants to non-profit voluntary organizations serving the blind, deaf, or orthopedically handicapped (149). Although no official standards have been set up specifying requirements regarding physical plant, personnel, or curriculum,

it is stated that such an organization "should have facilities, resources, experience and personnel to initiate the scheme for which assistance is sought . . . Its work should have been reported as satisfactory by the State Government . . . It should be providing a needed service for the handicapped." The assistance given is designed to provide for "developing all activities calculated to promote the education and training of the handicapped at all stages of education," unless the project concerned is already covered under provisions of the Central Social Welfare Board, or under other provisions of the Ministry of Education. Usually grants are given for purposes other than maintenance:

Construction of Buildings

Purchase of furniture

Purchase of educational or vocational equipment including hearing and prosthetic aids

Salaries and allowances of the staff

Purchase or transcription of books

Seminars, conferences, and exhibitions

Research and surveys

Publication of journals, pamphlets, and books

Financial assistance is given on a shared basis, not exceeding 75% of the non-recurring and recurring expenditures, the remainder to be borne by the state government and/or the organization concerned. Grants are usually given for a period of three to five years after the institution is founded. Applications for grants usually come through the state government although in some cases the organization or institution may apply directly.

The Ministry of Education encourages provision for handicapped children not only by providing grants for the construction and operation of special schools and institutions, but also by subsidizing experimental programs for integrating handicapped children into regular schools and by giving each year a number of scholarships to handicapped youth for additional academic education or training.

The rehabilitation services provided in India at various hospitals, institutions, and centers include: (1) medical care: diagnostic tests, restorative and surgical treatment, prosthetic and orthopedic appliances, convalescent homes, and physical and occupational therapy; (2) education for the blind, deaf, orthopedically handicapped, and to an increasing extent for the mentally retarded; (3) vocational training, including pre-vocational training in special schools; (4) job placement with recruitment for some government employment, special placement services in government employment exchanges, sheltered employment in workshops attached to some hospitals and vocational training centers, and industrial sheltered workshops; (5) pensions and allowances, with Ministry of Education scholarships and allowances for education and training of the blind, deaf, and orthopedically handicapped; and (6) social services such as welfare assistance, consultations with medical and psychiatric social workers, and follow-up services in clinics (448).

The term "disability" has not been officially defined, though rehabilitation officers have tended to concentrate on orthopedic and neurological impairment. Rehabilitation facilities and services have been made available primarily for the blind, deaf and deaf-mute, orthopedically handicapped, and disabled war veterans.

An illustration of the operation of such services, in this case primarily for the orthopedically handicapped, is that of the All India Institute of Physical Medicine and Rehabilitation in Bombay. Decisions regarding admission to rehabilitation services are made at twice-a-week case conferences participated in by representatives of the various specialized departments involved. Out-patients are accepted on the basis of recommendations from other departments of the hospital, self-referrals, referrals from private physicians, and referrals from social placement services for employment evaluation. Recommendations for appropriate services are made at the case conferences, which include vocational rehabilitation counselors who are responsible for vocational evaluation, guidance, and follow-up.

The overall purposes of the AIIPMR are to (1) provide diagnosis and treatment for the disabled; (2) provide education and vocational training; (3) investigate employment opportunities; (4) develop a teamwork approach in the rehabilitation process; and (5) develop facilities for the professional training of rehabilitation personnel.

In addition to its broad program of rehabilitation services, the AIIPMR furnishes advisory services to assist in the initiation and development of basic rehabilitation services in other institutions, coordinates its services with programs in other hospitals, cooperates with the Special Placement Service, and serves as a training resource for special placement counselors and a referral source for vocational evaluation of the disabled. Among the hospitals assisted in developing their own programs are the King Edward VII Memorial Hospital, J.J. Group of Hospitals, Children's Orthopaedic Hospital, Nair Hospital, Jerbai Wadia Children's Hospital, St. George's Government Hospital, all in Bombay and Irwin Hospital, New Delhi. The Employees' State Insurance Corporation is introducing rehabilitation departments into three Bombay hospitals with the aid of the Institute (448).

The increasing administrative responsibility assumed for the Institute by the central government is illustrative of the enlarging role of the Government of India in rehabilitation activities. The AIIPMR was formerly administered by the Government of India in conjunction with the Government of what was then Bombay State, and the Bombay Municipal Corporation, with a managing committee composed of two representatives of each of these bodies as well as of the Society for the Rehabilitation of Crippled Children. But since October, 1961, overall administration has been taken over by the Central Ministry of Health in New Delhi. Nine additional regional rehabilitation centers are to be established by the central government in other parts of India.

However, this increasing governmental participation operates in collaboration with, rather than in place of, voluntary groups which have also played an important role in developing rehabilitation programs, such as the National Association for the

Blind in Bombay which has its own Special Employment Service for the blind, and the Fellowship of the Physically Handicapped in Bombay which started a sheltered workshop for the orthopedically handicapped in 1957 (448).

State and Central governments cooperate with voluntary organizations such as the Society for the Welfare of the Physically Handicapped (Poona) which founded a Home for the Physically Handicapped in 1957, and the Society for the Education of the Crippled (child and adult) which was founded in Bombay in January 1959. Although the central government operates important centers for the blind and deaf — the All India Training Centre for Adult Blind at Dehra Dun and the Training Centre for the Adult Deaf in Hyderabad — there are important voluntary institutions providing for these groups, such as the Tata Agricultural and Rural Training Centre for the Blind established at Phansa, in the state of Gujarat, in January 1960 by the National Association for the Blind.

The first Special Employment Exchange for the Handicapped was established at Bombay in 1959, followed by eight other exchanges at Delhi, Madras, Hyderabad, Bangalore, Calcutta, Kanpur, Chandigarh, and Ahmedabad, and proposals for still others in each of the remaining states. Regular employment exchanges have been instructed to give special assistance to physically handicapped applicants. Throughout the country medical boards have been created which examine physically handicapped applicants for central government positions, with priority given such applicants by permitting some relaxation for them in age requirements though not in educational requirements. In some states, such as Maharashtra and Gujarat, special officers have been appointed under the Directorate of Social Welfare to deal with the welfare of the handicapped. The standard classification for the orthopedically handicapped developed by the Special officer in Maharashtra State has been approved by the Orthopedic Surgeon serving as an expert in the Ministry of Education, and is likely to be adopted by other rehabilitation centers in the country (448).

The most detailed report of rehabilitation services is that for Maharashtra State, where the Directorate for Social Welfare published a lengthy report in 1967 (370). Rehabilitation is recognized as a continuous process having three aspects — medical, educational, and social.

Until 1958, the education of the handicapped came within the jurisdiction of the Education Department, as in the central government, after which the reorganization of the states resulted in its transferral to the Social Welfare Department. A separate branch for the physically handicapped was created under a specially trained Medical Officer who is designated as Deputy Director of Social Welfare for Education and Rehabilitation of the Handicapped. He is assisted by four Inspectors for the Institutions of the Handicapped, one each for the blind, deaf, crippled, and mentally retarded. A medical Social Worker is also appointed.

A State Advisory Council for Education and Rehabilitation of the Handicapped, similar to the National Council, includes the Chief Minister of the state, the Minister of Public Health, the Minister of Social Welfare, the Deputy Ministers of these departments, the Surgeon General, the Director of Social Welfare, the Director of Technical Education, the Director of Employment, the Director of the All India Institute of Physical Medicine and Rehabilitation, and the Special Employment Officer for the Disabled. The purpose of this Council is to (1) advise on the coordination of activities and services relating to the handicapped, (2) disseminate information concerning the rehabilitation of the handicapped, (3) create greater public awareness concerning the problems and needs of the handicapped, and (4) perform such other functions as may be entrusted to it by the state government.

Grants-in-aid are given to registered and recognized schools and training institutions for the handicapped, on this basis: (1) for recurring expenses $\frac{2}{3}$ of the total expenditures or 30 rupees per month per person whichever is less; (2) for non-recurring expenses, 50% of the total cost of construction of buildings and purchase of equipment approved by the Directorate

of Social Welfare. This department also gives financial assistance to handicapped children and adults, to the extent that funds permit, for the purchase of prosthetic devices (370).

The pilot Employment Office for Physically Disabled at Bombay was set up in March 1959 on the recommendation of the Standing Committee of the National Advisory Council for Education of the Handicapped by the Government of India, as a first step in a program of establishing special employment offices of this kind at important centers of the country. This office serves the blind, deaf and dumb, and orthopedically handicapped. It registers physically handicapped applicants who are recommended by a recognized institution for the handicapped from Bombay State, or the Government Training Centre for the Adult Blind at Dehra Dun; those who have had industrial, commercial, or job experience and are residing in Greater Bombay; and those who have attained Secondary or High School Standard or above and are residing in Greater Bombay. Medical specialists examine the applicants and assess their eligibility for registration and capacity for work (220).

The section of the Directorate of Social Welfare in Maharashtra State for the period 1961-66 dealing with the physically handicapped handled the following caseloads for that period (132):

Year	Orth.	Blind	Mentally			Total
	Hand.		Deaf	Hand.	Others	
1961-62	38	5	15	0	0	58
1962-63	72	15	26	7	5	125
1963-64	113	45	3	13	5	179
1964-65	132	47	28	5	7	219
1965-66	154	49	37	3	10	253
Totals	509	161	109	28	27	834

The physically and mentally handicapped persons are initially examined by the Deputy Director. If they cannot be brought in for such an examination, a medical report is submitted. These persons are then referred to the following services:

- (1) hospitals for further treatment.
- (2) Artificial Limb Centre for fitting prostheses and appliances.
- (3) special educational institutions or regular schools.
- (4) vocational training centers.
- (5) for employment, to industries directly, to sheltered workshops, or to employment exchanges.
- (6) if unrehabilitable, Homes for the Infirm and Aged.

During the Third Plan, four sheltered workshops were opened by voluntary organizations with government subsidies, and it is proposed that three additional ones be established, including one Industrial Rehabilitation Unit; if no voluntary agencies create them, the government will provide them. Also -new buildings will be constructed at government institutions for the handicapped, especially since it had not been possible during the Third Plan to undertake any construction. Additions to buildings, alterations, and special repairs will also be needed (132).

Plans further include expansion of arrangements for training special teachers. During the Third Plan, 15 special teachers were trained in recognized institutions, but more will be needed as new institutions are established, and therefore it is hoped that 100 teachers can be trained in the current five-year period. The government pays for the training of teachers of the blind, of whom 40 will be trained. Additional outlays will occur for the prostheses and appliances needed by handicapped children attending government schools or attending regular schools or technical training institutions. Additional scholarships will also be provided for handicapped youngsters. Financial assistance will be increased for helping handicapped persons to start a small trade or business of their own, as in the purchase of sewing machines, handcarts, etc. While 250 persons were admitted to homes for the aged and infirm during the Third Plan, this

number is expected to increase to 750 persons referred to voluntary institutions given grants-in-aid for this purpose by the government; these institutions will therefore be expanded. In addition, the government itself will open two new homes of this kind, to provide for 100 persons in each. Welfare and rehabilitation provisions for leprosy patients will also be increased (132).

In the Fourth Five-Year Plan (1966-67 to 1970-71) Maharashtra State plans to spend the following amounts of money (in rupees) for social welfare programs for the handicapped:

Education and training of physically and mentally handicapped children and adults	2,598,000
Sheltered workshops, small-scale industries, agricultural-industrial and agricultural projects, etc. for handicapped adults	605,000
Construction of buildings for institutions for the handicapped	1,400,000
Training of staff employed in institutions for handicapped and at headquarters	275,000
Supply of artificial limbs, appliances, aids, etc. for the physically handicapped	75,000
Scholarships for physically handicapped students ..	550,000
Financial assistance to physically handicapped persons	60,000
Grants-in-aid to Homes for the Aged and/or Infirm	500,000
Opening government Homes for the Aged and Infirm, Mentally handicapped, physically handicapped, etc.	295,000
Rehabilitation of leprosy-affected persons	400,000
Total ..	6,758,000

In this Fourth Five-Year Plan an expansion of each of the above programs is envisaged. For special education and training, it is planned to open new schools for physically and mentally handicapped children, establish centers for the vocational training of handicapped adults, expand the facilities of existing government and voluntary institutions, begin pilot centers for children

with special educational needs, provide follow-up and research, and strengthen the staff at the Directorate. In the course of the Third Plan, eight new schools for the physically handicapped had been opened—two government and six voluntary. One government training center was also opened at Nagpur. In the Fourth Plan it is proposed to start 16 new schools for handicapped children—five for the blind, three for the deaf, five for the orthopedically handicapped, and three for the mentally retarded. Continuing encouragement and financial assistance will be given to voluntary agencies. One government home for crippled children was established in 1966-67. It is also proposed that a vocational training center for 50 persons be established.

To handle this expanded program, additions will be made to the Directorate of an Assistant Director of Social Welfare in the field of education and rehabilitation of the handicapped, an office superintendent, two senior clerks, three junior clerks, and one unskilled worker (132).

The state of Maharashtra thus provides the most varied and highly organized program of services to be found in any of the states, although many others are following suit, and the central government itself is steadily expanding its role in programs for the handicapped.

Better coordination of services on the state and national levels is apparently needed. There is considerable state autonomy in matters pertaining to health, a situation found also in urban areas. Although a Central Council of Health, comprising the health ministers of the various states, was formed in 1952, it has not yet succeeded in coordinating health policies to the extent considered desirable. Although some organizational integration has occurred at top government levels, it is believed that far less has occurred at the grass-roots level (281). Efficiency of service, of course, depends on other factors as well, such as the number of professional personnel, the nature of their training, and the financial resources available, but coordination of services would make possible more efficient use of whatever facilities are currently available.

Chapter 2

THE CHILD WELFARE SERVICES

The concept of social welfare as charity to the needy and helpless is gradually giving way in India to the concept of welfare as an "enabling service" to help individuals and families to cope with their social, economic, and emotional problems.* This point of view has gained acceptance as state responsibility for social welfare programs has increased. Also related are the efforts to develop a set of scientific principles and to formulate standards for both institutionalized and non-institutionalized services. Such standards are outlined in a pamphlet issued by the Central Social Welfare Board, called "A Guide to Minimum Standards for Welfare Services."

The Central Social Welfare Board undertook in 1966 a series of surveys in different states concerning the existing services for children below 16 years of age, with the objective of providing data of national scope to facilitate planning to meet the needs of children.** Agencies were broadly classified as primary (those with central emphasis on child welfare) and secondary (those where child welfare is secondary in emphasis to such fields as women, community welfare, or family welfare) (28).

*Welfare services are discussed here primarily as they affect the child, since the services concerned chiefly with adults are generally incorporated in the sections dealing with specific categories of handicapped persons, such as the blind, the deaf, or the orthopedically handicapped.

**The spread of child welfare services is illustrated by descriptions in the January 1968 issue of *Social Welfare* of new Family and Child Welfare projects inaugurated in twelve different states in 1967.

It was found that in Greater Bombay there were 375 child welfare agencies, of which 274 provided day services. Included were the following:

Agencies for socially handicapped children: 62

- 6 Family Welfare Agencies with day programs in such areas as adoption, foster-care, and sponsorship
- 4 Remand Homes and certified Schools for only court-committed children
- 21 Fit Persons' Institutions for both court-committed and non-court-committed children
- 29 Children's Homes for only non-court-committed children
- 2 Children's Sections in women's institutions to serve the children of inmates

Agencies for physically handicapped children: 12

- 3 for the blind
- 5 for the deaf
- 4 for the orthopedically handicapped

Agencies for mentally retarded children: 9

Agencies for children with leprosy: 1

Counselling and guidance services: 17

- 8 Child Guidance Clinics
- 4 School Social Work Departments
- 4 Vocational Guidance Bureaus

Most of these agencies are voluntary. The percentages of the total number which are sponsored in various ways are as follows:

Voluntary	..	..	..	..	..	60.8%
State government	..	..	..	..	..	21.6
Bombay Municipal Corporation	..	..	..	..	..	13.1
Quasi-governmental (such as the Children's Aid Society)	..	..	..	..	..	4.5

Eligibility criteria for agency services are based on religion, sex, and age.* Religion is a criterion in 22 of the agencies serving socially handicapped children, or 39% of the number in this category, and most of the 22 accept only Muslims. Of the total agencies, 7% have a sex specification—24 for the socially handicapped and one for the blind specify boys. Girls are specified for about 5%—15 for the socially handicapped and two others providing school social-work services.

Age ranges vary considerably, though children six to 12 years of age are most frequently provided for:

6-12	..	..	..	95%
12-16	..	..	..	91
3-6	..	..	..	48
0-3	..	..	..	25

Chances of admission in the 6-to-12 age range are 100% in agencies for the physically and mentally handicapped but in general the adolescent age group among socially, physically, and mentally handicapped children have fewer services than are needed.

The number of children handled annually varies considerably from agency to agency, but most of the agencies serve fairly small numbers. The medium size of the groups served is as follows:

Socially handicapped	..	..	..	60
Blind	..	..	..	75
Deaf	..	..	..	40
Mentally handicapped	..	..	..	27
Orthopedically handicapped	..	..	..	80

Only about 15% of the institutions for the socially handicapped have more than 300 children, and all of these are either Remand Homes or Certified Schools or Fit Persons' Institutions. There is one institution with more than 300 children for each of the

*Percentages hereafter are rounded off.

categories of the mentally handicapped, orthopedically handicapped, and children with leprosy.

Child Guidance Clinics and School Social Work agencies serve an average of 75 children each year, whereas Vocational Guidance Bureaus serve about 300. Community services in general have two patterns in terms of the size of the group served—70% have an average of 40 children and the remainder an average of 320 children.

Services can be classified as: (1) academic education, (2) vocational education, (3) health services, (4) recreation, and (5) special services.

Of the institutions serving the socially handicapped, 38% have educational facilities on the premises, most on the elementary level but a few have middle and secondary programs as well. The other institutions send the youngsters to local public schools. All the institutions for the physically and mentally handicapped have educational facilities; in general those for the blind, deaf, orthopedically handicapped, and leprosy-affected have middle schools, where those for the mentally handicapped have primary schools. There is an institution which includes secondary education for the blind, the deaf, and the orthopedically handicapped respectively.

Vocational training is found in 45% of the residential institutions for the socially handicapped, while 29% of these institutions provide it for their youngsters by using outside facilities, leaving 29%—most of them Children's Homes—with no services at all of this kind. The most common trades taught are carpentry, weaving, tailoring, printing, blacksmith work, and cane work; nursing, cooking, and domestic science are taught in the girls' institutions.

Similar types of training are provided in institutions for the physically and mentally handicapped, that is, in all but two (each of those for the mentally and orthopedically handicapped). Training for the blind includes also training as musicians and

physiotherapists, and several agencies for the mentally handicapped include other training such as agriculture and envelope making.

In terms of health services, all institutions for the socially handicapped provide a periodic examination of their children. About half have infirmaries on their premises, 21% have dispensaries, but 29% — again most of them Children's Homes — have neither. About 58% provide supplementary food for their children such as milk or a special diet when prescribed by the physician.

Among the institutions for the physically handicapped, only one for the deaf has no medical services at all. Similarly three for the mentally retarded have none. The agency for children with leprosy and one for the orthopedically handicapped, located in hospitals, provide an entire range of medical services to the children.

Many community agencies provide an integrated program of health services. The following kinds of services are available:

Ante-natal and post-natal services	26%
Well-baby clinics and mother-child services ..	1%
Both curative and preventive services	33%

Most in the third category are Community Welfare Centres where child welfare is only a secondary focus. Child Guidance Clinics and School Social Work agencies do not themselves provide medical services, but secure them from other agencies when necessary.

Physical recreation in the form of indoor and outdoor sports and physical education is provided in all the institutions for the socially, physically, and mentally handicapped as well as in 86% of the community service centres. The time allocated to such activities, of course, varies. Most of the institutions for the socially handicapped and the blind allow 10 hours a week, but in Children's Homes and in institutions for the deaf, mentally handi-

capped, and children with leprosy there may be only two to six hours of such activity. Music, singing, dancing, and dramatics are found in all the institutions for physically and mentally handicapped children, with music emphasized in agencies for the blind. But only 54% of those for the socially handicapped have such activities. Arts and crafts are also a common feature. Movies are shown in 57% of the institutions for the socially handicapped, about 50% of those for the deaf and orthopedically handicapped, in all the agencies for the blind and mentally handicapped, and in most of the community service agencies. Debating is found in all institutions for the blind and in 40% of those for the socially handicapped. The radio is rarely used in any. Library facilities are found in about half of the institutions: 54% of those for the socially handicapped, 50% of those for the physically and mentally handicapped, 43% of the community service agencies, and all three of those for the blind. Picnics, excursions, and other forms of social recreation are provided by all agencies except the Children's Homes and Fit Persons' Institutions. Scouting has been started in only a few places.

Special services are provided by the Counselling and Child Guidance agencies. The nine Child Guidance Clinics use play therapy, individual psychotherapy, psychological testing, and casework when treating children with behavior problems. Educational testing and counselling are provided by the four Vocational Guidance Bureaus. Casework, of course, is provided by the School Social Work Agencies (28). For example, a Guidance Clinic and Service Centre is maintained by the Indian Society for the Rehabilitation of the Handicapped, and operates as a pilot project in a school in Bombay. This clinic identifies children with scholastic, health, home, and social problems in the city schools through a program of medical examinations and psychological and vocational testing. Since August 1968 a full-time social worker has been employed, who makes home visits, meets with students, and gives talks on health education to the older girls (324).

When necessary, other special services such as speech therapy are obtained by these agencies. The services of these clinics and bureaus are used by about five institutions for specially handi-

capped children and 15 community service agencies. Speech therapy is available in four institutions for the deaf, four for bureaus are used by about five institutions for socially handicapped. The mentally handicapped seem to be provided for best by special services obtained from a variety of agencies. Specific religious and moral training is mentioned only for the institutions for the socially handicapped.

It is estimated that only about a fifth of the institutions for socially handicapped children and a third of those for the physically and mentally handicapped pay no attention to the question of the total rehabilitation of the child for life outside the institution. Efforts toward rehabilitation include such means as work placement, readjustment to the family, arranging marriages in institutions for girls, and arrangements for adoption, foster-care, and placement in other institutions.

In all the counselling and guidance agencies and in half those for physically and mentally handicapped children, services for parents have been developed, which include involving them in agency plans for their children, individual counselling, group discussions, and inviting them to agency functions (28). As a recent example, the Maharashtra State Branch of the Indian Conference of Social Work organised a short-term orientation course on the subject of "Understanding the Handicapped Child" in February 1968. This course for parents and others working with handicapped children emphasized the causes of handicapping conditions, the social, psychological, and practical problems produced, the means of rehabilitation, and the role of the social worker. The five sessions of ten lectures were attended by 60 persons (285).

The importance attached to these special services, within the community setting, for parents of handicapped children is indicated by the priority given to parent education in Indian social welfare planning. It is recognized that well trained field workers play a key role in these developing programs and that because they often work in remote, isolated areas, they need the stimulus

of refresher courses, seminars, and conferences, as well as published materials. Though many more books, pamphlets, and manuals are still needed by field workers in the organization of their programs, a start has been made by the Central Social Welfare Board in issuing a monthly bulletin directed to them (41).

A new direction in parent education was taken in a recently inaugurated program of Family and Child Welfare aimed at the total development of the child and focused on the training of young mothers regarding child care and development. Aided by UNICEF, this project includes provision for the training of supervisory and field staff (41). Other states have developed similar programs through Child Guidance services, as in the case of two Child Guidance Clinics established in 1956 in Agra and Varanasi by the Social Welfare Department of Uttar Pradesh, with the purpose of providing guidance and counselling for parents and teachers concerned with mentally and physically handicapped children (269).

Much of the progress in provisions for child welfare in Maharashtra can be attributed, directly or indirectly, to the efforts of the Maharashtra State Women's Council, which has been especially active in work for the welfare of women and children. As the culmination of their year-long Jubilee programs in 1967, the Council held in Bombay an International Conference on "Women and Social Change in Asia," in collaboration with the German Foundation for the Developing Countries (341).

For the child in the hospital, an important role is assumed by the social group worker. The purpose of this worker is "to help individuals by means of guided group experience, to develop and use their capacities for personally satisfying social relationships; to help them to deal with the problems presented by their environment and to use the resources of this environment in a constructive way." As a member of the social service department of the hospital, the worker cooperates with the physician to help the child adjust to the traumatic separation from family and home, since the child often regards removal from his home as

rejection by his parents, and the hospital experience — especially if painful — as punishment. The media used are arts and crafts, music, games, discussions, and dramatics, especially the acting out of themes related to illness and treatment; in other words, the role seems to combine elements of occupational therapy and psychological therapy, with techniques akin to group therapy and psychodrama (419).

Three major non-residential forms of service provided for the protection and care of children in India are adoption, foster-care, and sponsorship. Sponsorship means that financial aid is given to a family who otherwise might be forced to put their child in an institution (285). The diversity of religions and cultural subgroups in India presents complications in making the most efficient use of these services.

Institutions in general have been preferred to foster care for children with serious handicaps of blindness, deafness, or mental disturbance, who cannot be cared for in their own home. But foster-care may be increasingly used, since it is less expensive than institutional care, is usually better than that found in institutions, and in addition encourages the possibility of the child's returning to his family. Sponsorship for handicapped children may likewise increase, thus keeping the child within his family (40).

An important aspect of the development of such services has been the steady emergence of protective legislation related to the child. Much of the child-welfare legislation is intended to protect the child-worker from exploitation. Children under 14 years of age were estimated to number 213,000,000 in 1968, and it was predicted that this number would increase to a total of 254,000,000 by 1976. About 8% or 17,000,000 were employed in some way in 1961, with an anticipated increase to between 19,000,000 and 20,000,000 by 1976 (192).

The first all-India child-welfare legislation was the Apprentices Act, 1850, which applied to youth from 10 to 18 years of age. Under this Act, both boys and girls were bound as apprentices

if they were convicted of petty offences, or if found destitute. The Factories Act, 1881, forbade employment of children under the age of seven. The Factories (Amendment) Act, 1891, defined a person under the age of 14 as a child, prohibited child labour under the age of 9, and placed limits on the working hours of those 9 to 14 years of age (223).

Protective legislation regarding children has also included endorsement of international recommendations from the International Labour Organisation. India has ratified the following ILO conventions:

Night Work of Young Persons (Industry) Convention,
1919.

Minimum Age (Trimmers and Stokers) Convention,
1921.

Medical Examination of Young Persons (Sea) Convention,
1921.

Night Work of Young Persons (Industry) Convention
(Revised), 1948.

Article 24 of the Directive Principles of State Policy in the Constitution of India states that:

No child below the age of 14 years shall be employed to work in any factory or mine or engaged in any other hazardous employment.

Free and compulsory education shall be provided for all children up to the age of 14 (190).

Other labor legislation for the protection of children and adolescents includes the following (192):

1. *The Children (Pledging of Labour) Act, 1933.* Parents or guardians may not make any written or oral agreements to pledge the labor of a child less than 15 years old, with a fee for this agreement.
2. *The Employment of Children Act, 1938.* This Act, and its subsequent amendments, seek to prevent exploitation

of children in workshops not covered by factory legislation. No child under 15 shall be employed in occupations connected with the railway transportation of passengers, goods, or mail, or with a port authority.

Those 15 to 17 years old, except for apprentices, must have a rest interval of at least 12 consecutive hours in a 24-hour period, including at least 7 hours between 10 p.m. and 7 a.m. Children under 14 may not work in workshops connected with bidi-making, carpet-weaving, cement-making, cloth-printing, dyeing and weaving, match-making, explosives and fireworks, mica-cutting and splitting, shellac-making, soap-making, and tanning and wool-cleaning.

3. *The Factories Act, 1948.* Conditions are specified under which young persons may be employed to work with dangerous machinery. State governments are empowered to stipulate maximum weights to be carried or lifted by men, women, or children. No child under 14 is to work in any factory. Children are to have medical examinations before employment and periodically thereafter. No child shall work more than $4\frac{1}{2}$ hours a day. Night employment of children and adolescents under 17 is forbidden. (Adolescents are defined as 15 to 18 years of age.) The factory manager must keep a register of child workers, with information concerning the nature of his work, etc. The child worker is to have a weekly day of rest, and after working at least 240 days in a calendar year is entitled for leave with pay at the rate of one day for every 15 work days.
4. *The Minimum Wages Act, 1948.* Minimum wage scales for regular and overtime work are specified for all persons in different occupations and localities.
5. *The Plantations Labour Act, 1951.* No child under 12 may work on plantations. Those 12 to 18 years of age must be certified as fit for work by an appointed certifying surgeon. Weekly hours are fixed at 40, with no work bet-

ween 7 p.m. and 6 a.m. Every child worker is to have leave with pay at the rate of one day for each 15 days of work.

6. *The Mines Act, 1952.* The minimum age for employment in mines is 15, and no adolescent may work in any underground part of a mine unless he is 16 and officially certified to be capable of work as an adult.
7. *The Indian Merchant Shipping Act, 1958.* Employment in merchant shipping is banned for children under 15, with certain exceptions, and in general adolescents are not to work as trimmers and stokers.
8. *The Motor Transport Workers Act, 1961.* Employment of children in motor transport industries is forbidden. Adolescent workers are to have a certificate of fitness, and are not to work more than 6 hours a day, including a rest period, and shall not work between 10 p.m. and 6 a.m.
9. *The Shops and Commercial Establishments Acts.* These contain special provisions governing child labor in various states. Five states specify a minimum working age of 14, and the rest 12. No young person is to work between 7 p.m. and 6 a.m. The maximum hours of work vary from 3 to 7 per day in different states, with rest periods varying from half an hour to 3 or 4 hours.

State legislation affecting child welfare includes the Madras Children's Act IV of 1920 and the Bombay Children's Act of 1924, which specified minimum requirements for the treatment of children apprehended under these acts. These were followed by an improved and enlarged version of the Bombay Act in 1948, the Punjab Children's Act of 1949, Uttar Pradesh Children's Act of 1951, Saurashtra Children's Act of 1954, and the Saurashtra Women and Children's Institutions Licensing Act of 1955. This last Act established for the first time minimum standards for women's and children's institutions, and provided machinery for supervision and inspection.

Significant legislation from the central government has been the Women and Children's Institutions Licensing Act of 1956, the Children's Act of 1960, and the Orphanages and Other Charitable Institutions (Supervision and Control) Act of 1960. These Acts have since been adopted by several state and territorial governments. The Suppression of Immoral Traffic in Women and Girls Act of 1958 made licensing of protective homes compulsory for women who need this protection, specified the procedure governing admission and follow-up, diet and clothing, medical examinations and treatment, and mandated educational and vocational training for the inmates. Related legislation includes the Probation of Offenders Act of 1958 and the Bombay Children's (Management of Remand Homes maintained by District Association) Rules of 1958 (142).

Implementation of such standards and laws has been hindered by a lack of technical skills and knowledge. To meet this need, a counselling service has recently been introduced to enable social agencies to use their resources efficiently and to help grant-making organizations to make their programs more meaningful (142).

An important initial measure in providing child welfare services has been an attempt in some areas to determine the nature of the problem and the kinds of services required.* A health survey of the Surat Branch of the All India Women's Conference obtained information about all kinds of children's problems, including physical handicaps, as a basis for deciding the facilities needed (435). There was an annual death rate among children under one year of age of 126 per 1,000 in the area investigated. A Child Welfare Centre was established by the Conference in 1954, and the survey undertaken in 1956, with medical examinations of children under five in the Sagrampura Ward. A team of volunteers went from house to house for interviews and collection

*Information concerning welfare needs and services now accumulates through the organization of meetings such as the one organized by the Maharashtra State Branch of the Indian Conference of Social Work, held in Bombay in late March and early April, 1967; the theme of the conference was "Progress of Child Welfare Services in Maharashtra."

of data. Better cooperation was obtained from middle-class families than from lower-class ones. A total of 1,712 data forms was completed in one month's time, following which arrangements were made for a medical examination of the cases by establishing five centers (four in dispensaries and one in a school) where doctors volunteered to examine children on Sundays. Examinations were arranged for 1,350 out of the 1,712 children, which revealed the following health statistics:

17.2% of the children were completely healthy.

83.0% had at least one disease.

47.4% had worms.

39.7% had diarrhea and dysentery.

25.3% had rickets.

13.3% were not vaccinated.

25.8% had infected tonsils.

The 342 cases of rickets urgently needed attention because of the possibility of developing deformities later. There were 13 cases not fully diagnosed which may have been infantile paralysis or cerebral palsy.

Preventive measures for dealing with handicapping conditions have been improved since independence was achieved. The maternal mortality rate in India in 1955 was 10 per 1,000 compared with 0.64 per 1,000 in the United Kingdom and 0.47 in the U.S.A. Although voluntary groups like the Red Cross had been concerned about mother and child welfare as early as 1920, it was not till 1947 that the government set up the Bhore Committee that worked out a plan for primary health centers. Maternal and child welfare service organizations began to appear, such as the Indian Council for Child Welfare established in New Delhi in 1952, and the Child Health and Care Association the following year. The Kasturba Gandhi National Memorial Fund has been concerned with the training of nurses and midwives and the welfare of women and children especially in rural areas. The Skippo Village Mobile Vans of the All India Women's Conference, staffed by a physician and a nurse, give free medical

treatment in their daily trips to remote parts of the country. International agencies such as WHO and UNICEF have also aided materially. The number of maternal and child health centers increased from 1,651 in 1952 to 4,500 in 1961, with successive Five Year Plans allotting increasing amounts of money for such centers. Improved services of this kind are expected to reduce the incidence of crippling at birth. Unfortunately the high rate of illiteracy among women makes education in good prenatal and postnatal practices very difficult. Better trained obstetrical personnel and modern equipment should reduce infant mortality, since half the deaths in India occur among children less than ten years of age, and half of these deaths among children within the first year of life (27).

The infant mortality rate in India was reduced from 154 in 1955 to 126 in 1965. The infant mortality rate in Maharashtra State is now 90 per 1,000 live births, with a larger rural rate — 94 versus an 86 rate for urban areas (85.6 in Greater Bombay). The maternal mortality rate is 3.6 per 1,000 live births in the state, but only 1.0 per 1,000 live births in Greater Bombay.

Before 1955 the maternal and child welfare services were provided by a variety of public and private agencies, each working independently and being responsible to no other group. This led to much overlapping of services, lack of cooperation and coordination, and lack of standardization in the programs provided. In 1955 the state government in Bombay established a Maternity and Child Welfare Bureau with headquarters at Poona, and undertook a maternity and child welfare project in Bombay and Nagpur, collaborating with the central government, WHO, and UNICEF. This work in rural areas is now integrated with the work of the primary health centers and public health units (27).

In 1961 there were 615 of these Maternity and Infant Welfare Centres in Maharashtra State — 392 in rural areas and 223 in urban areas. Of course, 364 were run by the state government, 133 by municipal authorities, and 118 by other agencies. In addition there are many proprietary maternity centers. Prenatal,

postnatal, and infant care are provided by nurses, midwives, public health nurses, health visitors, and other trained personnel. Nurses and midwives are trained in the maternity institution itself. Health visitors have one training school at Nagpur. In Greater Bombay the municipality has provided maternity and child welfare services through 20 Municipal Maternity Homes and 28 Maternity and Child Welfare Centres (as of 1964). Such centers benefit from UNICEF distribution of powdered milk, especially in rural areas. Smaller units are needed, with more and better trained staff, adequate record-keeping, and government supervision (27).

Cooperative public and private efforts have resulted in a steady increase in the number of creches, day-care centers, milk distribution centers, midday meal centers, nursery schools, child guidance clinics, children's libraries, and playgrounds. Special programs for handicapped, destitute, neglected, and predelinquent and delinquent youngsters have been started by organizations such as the Central Social Welfare Board, the Indian Council for Child Welfare, and the Indian Conference of Social Work. About 6,000 voluntary organizations have received financial aid from the central and state social welfare boards for these programs (192).

The 1967 Family and Child Welfare program included (1) provision of integrated social welfare services for children in villages, especially pre-school children; (2) provision of basic training for girls and women in domestic, health, and child care activities; and (3) promotion of cultural, educational, and recreational activities for women and children (192).

Pre-primary centers with educational programs for mothers are becoming more numerous. Of the 95,000,000 children under six years of age, 2,500,000 or about 3% are now attending some type of pre-school center such as a creche, day nursery, kindergarten, or nursery school providing either part-time or full-time care and education. Most of the centers are found in large cities, but since the organization of the Central Social Welfare Board in 1953 they are being established in rural areas as well.

In Maharashtra State, with its 40,000,000 people of whom 5,000,000 are children five years old or younger, there were in 1964, 500 officially recognized and aided pre-primary institutions serving 34,298 children. The percentages of each age group (in the child and adolescent age range) enrolled in school at that time was:

Age Group	Enrolment	Percentage of Total Age Group
Pre-primary (0-6)	34,298	3.7%
Primary (6-11)	4,631,419	56.1%
Secondary (11-14)	1,100,649	53.7%

The figures cited for pre-primary attendance apply only to officially recognized programs. There are others which may or may not meet minimum standards: (1) those for children from rich families, and (2) those for children of working mothers who live in nuclear families and cannot afford domestic help to care for the children during the mother's absence.

The government pays only 11% of the cost in the pre-primary school as compared with 69.4% and 61.3% for primary and secondary education in Maharashtra State. Most of the 500 pre-primary programs use Marathi as the medium of instruction. Pre-primary schools for children from the so-called "backward" (underprivileged) classes, the "scheduled castes," and "scheduled tribes" are financed under special regulations. Also provided for the "backward" peoples are the Samskar Kendras, a kind of health and recreation or social-education center for women, who are usually accompanied by their young children. The women are usually taught crafts related to their interests and to the sales possibilities for the products. A total of 122 Balwadis (day-care centers) and 85 Samskar Kendras serve over 7,200 children from these Maharashtra tribes and castes. In either kind of center, a teacher and an assistant are usually provided. There is a special training course of eleven months' duration for the Balwadi teacher in health and nutrition, pre-school education, recreation, administration, and social services; 109 were trained between 1964 and

1967. Another experimental program with a rural emphasis is under way.

Pre-primary programs are often related to medical and health services. The Bombay Mother and Children's Welfare Society operates maternity and child welfare units, four in Bombay and ten in rural areas. The services include distribution of milk and other dietary supplements, the training of midwives, provision of health visitors, and mobile dispensaries. One center in Bombay makes special provisions for children up to six years of age, with a creche, a nursery school, and leisure-time activities for children attending school. The Maharashtra State Council for Child Welfare has undertaken a comprehensive program of child welfare in cooperation with some rural agencies, focusing on medical check-ups, vaccinations, and other health services. Some district councils and voluntary groups are also making pre-primary provisions.

Facilities and services are criticized as being too scattered and uncoordinated, and providing little uniformity or continuity, some stressing basic education at the expense of the nutritional and health aspects of child services, and others doing the opposite. Also the wisdom of these recent efforts to provide nursery education for all children $2\frac{1}{2}$ years old is questioned in view of the pressing need for other services. Preventive welfare programs of a social and psychological nature may be more important (63), such as a broad program of parent education in association with the medical services provided by maternity and child welfare centers (85). Adequate prenatal and postnatal care are extremely important, involving a total of 26,000,000 expectant and nursing mothers, 32,000,000 children one year of age or under, and 63,000,000 children one to six years of age, not to mention the 79,000,000 children six to eleven years of age who are less vulnerable but who would benefit from a continuous program of postnatal care (76).

Social workers will have an increasingly significant role to play in all welfare services. Considerable progress has been made

in recent years in improving the quality of their training and increasing the numbers trained (409).

Interest in the field of social work as an appropriate career for women may be enhanced by the example of Mrs. Neera Dogra, a pioneering social worker from a prominent family in the state of Assam, who was recently appointed Chairman of the Central Social Welfare Board in the Government of India. Her mother, as a result of the influence of Mahatma Gandhi, helped to form women's organizations which eventually provided the nuclei for organized welfare work for women and children in the state of Assam. The daughter, herself influenced by the work of the famous Italian Dr. Montessori with whom she studied after completing a university education, entered the fields of education and social work, finally becoming the Chairman of the first State Social Welfare Advisory Board in Assam (309).

Formal social-work training at first consisted in the 1920's of brief courses offered by voluntary welfare organizations. The Social Service League of Bombay was the first group to start short courses for persons offering voluntary social-work services, an example soon followed by other groups. In the late 1940's the University Settlement in Mysore began to provide training courses for its own employees, the Children's Aid Society initiated study groups for its voluntary probation staff, and the Nagpada Neighbourhood House of Bombay conducted a one month training course for its own workers plus a few other students (409).

While these courses did serve a useful function, they suffered the limitation of having rather elementary, narrowly focused content that provided little understanding of social-work methods and techniques and of the social sciences as related to this field. Also they usually lacked a full-time instructional staff and well defined curricula.

Professional education for social work originated in 1936 with the establishment of the Sir Dorabji Tata Graduate School of Social Work, Bombay, which is now known as the Tata Institute

of Social Sciences. The program now offered differed considerably from the earlier ventures, being patterned after social-work education in the U.S.A. This emphasis was due to the fact that the first director was an American, and also the fact that at that time the most serious efforts in social-work training were being made in the U.S.A. It had been recognized long before this in India that more adequate training was needed for social workers, and the American programs simply provided influential examples of appropriate orientation and subject matter for such training. This new program was a two-year course leading to a Diploma in Social Service Administration, and avoided any university affiliation so that freedom to experiment would be assured (409).

For ten years from 1936 to 1946, no other institution provided professional training of this kind, but after India achieved independence a rapid development of such programs occurred, until at present there are 21 programs with full-time two-year post-graduate courses for a total of 700 students annually, leading to a university degree in social work at the master's level or a diploma of similar level. In addition other institutions offer shorter courses of varying types which are related to social work.

While minor variations in content and organization are found among the two-year programs, their curricula are fundamentally similar in emphasizing theory, field work, and research. Theoretical work covers background subjects in the social sciences, and field work stresses social-work theory and methodology. Most schools also offer the opportunity to specialize in some particular branch of social work, such as labor welfare and personnel management, rural welfare, medical and psychiatric social work, criminology and correctional services, family and child welfare, institutional and after-care services, tribal welfare, social research, and urban community development. Thus the basic offerings, while modeled after American courses, allow modification to meet Indian needs. There is increasing realization that foreign literature is not sufficient for this purpose, and that India must develop pertinent materials of her own for student use. Field work is arranged concurrently with classroom work, in blocks of time

alternating with classroom work, or as a combination of these two methods. It may consist primarily of observation and interviews with agency personnel, or it may involve actual participation in agency functions (409).

A continuing problem is the provision of an adequate variety of field-work experience. Some agencies are still in the hands of untrained personnel who operate in traditional ways, and who may fail to understand the real purpose of field work. Agency practices thus often lag behind those taught in the classroom. Sometimes limited student participation results when the program of the agency itself is limited, or when supervisors regard the students as aids rather than as persons in training. Inadequate supervision may likewise result from lack of qualifications or lack of time on the part of agency personnel. This field work leads eventually to a dissertation or research project as a final part of the degree requirements. Group projects involving the cooperation of several students are increasingly common (409).

Although long period of training and practical experience are now recognized as necessary for the professional social worker, there continues to be a need for the more limited short-term courses. Most volunteer social workers cannot be expected to go through the longer professional program. For this reason the State Women's Council in Maharashtra organized in 1959 a three-month training course, enrolling 40 trainees. The first two months were devoted to lectures on topics such as the historical growth of social work in India, social problems and programs, techniques of social work, social legislation, and program planning on the community and agency levels. The third month was devoted to institutional visits and seminars (271).

Other limited programs of training and guidance are being provided as part of the family and welfare programs developing through the cooperation of the Central Social Welfare Board, the State Social Welfare Advisory Boards, the state governments, voluntary organizations, and international organizations such as UNICEF. Among the projects which have been organized are training programs for welfare workers at all levels, such as a

special training course undertaken by the Delhi School of Social Work and sponsored by the Central Social Welfare Board in New Delhi. To this course were summoned Welfare Officers and Inspectors of the Social Welfare Advisory Boards of the various states as well as instructors from three training centers for social workers. The Central Social Welfare Board also provides field guidance to Child Welfare Workers by means of special monthly supplements to its publications — *Social Welfare* in English and *Samaj Kalyan* in Hindi (491). Another program for child welfare workers was conducted in February 1969 by the Central Institute of Research and Training in Public Cooperation; this ten-day orientation course was attended by 35 persons from various parts of India (83).

Social-work educators feel that an important development for improving training programs in the future will be the establishment of a permanent national body composed of representatives of government, voluntary organizations, related professions, and schools of social work to study the problems of social-work education and to suggest ways of expanding its usefulness (409).

In spite of ambitious earlier plans for a nucleus of trained personnel in the central and state offices of the Indian Council of Social Welfare (formerly known as Indian Conference of Social Work) to serve as a clearinghouse for information, there is still no such centering of expert consultative services. Although funds for social-welfare purposes have been increasing, they have at times been used for hastily conceived and impractical projects initiated by persons with limited experience in the areas concerned. Small-scale pilot projects may be more valuable than more ambitious far-reaching efforts. Social-welfare organizations need to undertake a great deal of patient and detailed research and to have wider experience in applying various techniques under the diverse conditions represented in the complex Indian culture before they can be of real help in broader social developmental planning (63).

Adequate financing of welfare programs continues to be a problem. Some welfare experts have urged that additional funds be raised by means of a national lottery or a 2% Child Welfare

surcharge on corporation taxes, income taxes, gift taxes, and property taxes. Others suggest the allocation of 10% of all funds collected by voluntary religious organizations for child welfare. Private philanthropy may decrease because of high taxes and rising living costs (76).

But planning child-welfare services in a country like India where the average per capita income is only 25 to 30 rupees a month must obviously start with the problem of family planning (63). Programs of population control may include raising the marriage age, possibly to 23 for girls and 25 for boys, besides legalizing abortion and providing a variety of birth control services (76).

Major needs for child welfare programs in India are:

- (1) a Mental Deficiency Act;
- (2) an All India Act along the lines of the Bombay Children's Act;
- (3) diabetic centers or schools for diabetic children;
- (4) schools for children with leprosy;
- (5) many more schools for all categories of handicapped children;
- (6) sheltered workshops for older handicapped children;
- (7) smaller Homes and some probation hotels;
- (8) a better foster-care program;
- (9) diagnostic centers and homes for placement of emotionally disturbed children (223).

A basic need is for more effective centralization of services, since at present they are divided among various ministries and departments, with the result that many of these functions overlap (41). A recent development which may facilitate the functioning of central government agencies in the development of child welfare programs is the fact that the Central Social Welfare Board has now been reorganized and registered as a Company under Section 25 of the Charitable Companies Act, with an autonomous status that provides greater flexibility in working out its arrangements with state governments and state Social Welfare Advisory Boards. This new status also makes possible the tapping of other financial sources in addition to the funds budgeted by the central government (67).

Chapter 3

THE EDUCATIONAL SERVICES

Special education refers to all the special provisions made to enable handicapped children to acquire an education, whether in the home, hospital, regular school, or special school. The problems faced in making these special provisions must be considered within the context of general education for all children. Since special education with its requirements for services, facilities, equipment, and specially trained teachers is more expensive on a per-pupil basis than general education, policy-makers and administrators give a higher priority to education of normal children; in this way limited resources can provide services for a larger number of individuals. This is particularly true to India where there are still so many normal children whose educational opportunities are limited or non-existent.

Education in India has all the problems common to developing countries as well as some that are almost unique. These include India's recent emergence as an independent nation; the need for progress achieved without too much disruption of old patterns of life; social inequalities as epitomized by caste systems; the low status of women; population growth so rapid that it tends to outstrip resources even though the latter are growing; a shortage of capital; and general poverty, ignorance, and superstition. There are also the problems presented by geography and climate, by food habits associated with religious beliefs, by multiple languages, by traditional concepts of the nature and purpose of education, and by concern about the present role and future status of the country as an international power (216).

India is a multilingual country with a total of more than 200 languages of which 14 are major regional languages. The Dravidian languages of the South are markedly different from the Sanskrit languages of the North, although in one form or another nearly half the Indians can understand the languages of the northern group. Hindi and Urdu are so closely related that during the British administration a blend of them called Hindustani became current, and Gandhi recommended that this colloquial form be emphasized. Nevertheless Hindi has been made the official language of India, even though this decision has not been fully accepted, particularly in the South (216).

English has continued to be widely used on the university level, partly because of past practice and partly because of the greater supply of textbooks and publications in English. It is still uncertain whether English, Hindi, or regional languages will be emphasized in higher education in the future. It is therefore not uncommon for a youngster even before he reaches college to have studied four or five languages: his local tongue, a regional language, Hindi, English, and perhaps even another modern language used in his area or an ancient language identified with certain scriptures such as Sanskrit, Arabic, or Persian (216). This situation presents special problems for students with sensory handicaps, who have difficulty in mastering just one language; proficiency even in Hindi is usually quite limited in their case. Therefore they seldom go on to the university, where three languages may be needed (370).

Another major problem is inadequate nourishment, which may also prevent the youngster from gaining full benefit from those educational opportunities that are available for him. The children from birth to 16 years of age constitute about 40% of the total population, and more than 70% of them are said to go to bed hungry every night. Although Indian authorities claim that about 90% of the boys attend school, the advantage of such attendance may be limited by nutritional deficiencies which stunt the child's physical and mental growth. This may account in part for the dropout rate, since half the children who enter Class I drop out before completing Class V, while barely 34% complete Class VII (76).

Education, for either able-bodied or handicapped children, is generally much more limited in tribal life than in the life of settled communities. Only 10% of the so-called "Scheduled Castes" are literate compared with 24% of the general population, though the percentage varies considerably from one state to another, with a high point of 32% in the state of Delhi. Improvement in educational opportunities is occurring, as indicated by the fact that the percentage of "untouchable" children enrolled in primary school has risen more rapidly than for other children. At the same time, their enrolment in secondary and higher education remains low (58). Fortunately schools are multiplying, and in the case of nomadic groups residential schools are being organized, plus hostel accommodations for youth attending secondary schools in larger population centers. The allocation of a given number of admissions for tribal children in various colleges and institutes has also helped to increase the total receiving such education and training. For example, in the Arts, Science, Engineering, and Polytechnic Colleges 20% of the places are reserved for Backward Classes students, in Industrial Training Institutes 5% are reserved, and in medical and agricultural colleges 15%.

The actual figures for a functional literacy are undoubtedly far lower than the reported figures for literacy. Data on literacy are difficult to interpret for a variety of reasons. Definitions of literacy are usually vague, and so persons with a minimal ability to read and write may be called literate even though they may be unable to use these limited skills in any practical situation. Even when a specific definition of literacy is given to census-takers, these persons may not really understand the definition or apply it uniformly throughout the country. Furthermore, in a multilingual country like India functional literacy may necessarily mean ability to read and write more than one language, such as the official language of Hindi and the local language. Also those who are barely literate often lapse back into illiteracy because they have nothing to read and no paper on which to write (281).

Although official Indian figures indicate that school enrolment has increased twice as fast as the increase in the age group of

5 to 14 years, such figures are open to question. A child listed as enrolled in school does not necessarily attend school the entire year; though registered, children may have attended school only briefly or irregularly or perhaps not at all. The desire on the part of teachers and administrators to make a good showing will naturally lead to emphasis on registration figures alone. These data also do not indicate the number of children repeating a grade, and there is evidence that many stay behind for a year or more, and are over-age for their grade. Nor are dropouts indicated. It was estimated that barely 41% of those children starting to school in 1955-56 were in the fourth grade three years later. Irregular attendance may be related to dropping out, and this irregularity in turn may be due in part to the parents' use of the child's labour in agricultural work or in tending younger siblings when parents work, especially when vacations are not synchronized with periods of planting or harvesting. The better teachers tend to be concentrated in urban areas, and so the single-teacher schools which provide for many more children usually have the poorest teachers, another factor leading to disinterest and poor school attendance. Poor instruction is also related to the low pay for teachers, who may actually earn less than the average employed person, and this low salary in turn is a reflection of their low social status (281).

Limited or irregular pupil attendance can also be explained in part by the rigid and authoritarian practices of teachers. Learning by rote still represents a carryover from traditional Moslem and Buddhist educational practices, though continuation is reinforced by the lack of textbooks, printed materials, and paper. Little is done, at any level of the educational process, to encourage questioning and critical thinking, and yet an inquisitive and experimental approach is essential to progress and cultural development. Education has long represented in India a passport to privilege and social status, a preparation for administrative posts setting off the individual from the lower echelons of society, in the present period of independence as it did in the past period of colonial dependence (281).

The education of girls continues to lag behind that of boys, in part because of a long religious tradition, since all three Asian

religions — Islam, Buddhist, and Hindu — have “cared little for the education of girls and have placed women in an inferior position,” even though present-day reformers realize that the nation’s development will be impeded if women remain ignorant and uninformed. But it is not merely a matter of lack of education; it is also a matter of miseducation, a lack of relationship between a formal, memoriter learning and the needs and demands of everyday life. Another paradox is that education in a foreign language — in this instance, English — alienated the educated upper class even more from the general population even while it did serve to keep open important lines of communication with better developed countries (281).

Both Gandhi and the Indian National Congress gave strong support to the principle of equality of educational opportunity for boys and girls, as did many progressive British officials like Curzon, but the weight of tradition still impedes translation of this official policy into educational reform (281).

The dropout rate is especially high for girls. In 1965-66 in India as a whole 78.5% of the children were enrolled in Classes I to V. 32.2% in Classes VI to VIII, and 17.8% in Classes IX to XI. For girls the percentages in that year were only 56.2%, 16.7%, and 7.8%. Of course these percentages vary considerably from state to state. As many as 60% of the pupils drop out after only one or two years of schooling. The advantages of education are increasingly recognized, but its benefit for girls is being acknowledged much more slowly (193).

Among the factors that tend to limit educational opportunities for girls as compared with boys are: the general attitude that girls should marry at an early age and devote their lives to child-rearing; resultant parental indifference to girls’ education especially at the secondary level; the continuation of taboos against work outside the home for women, even occupations such as social work, clerking, and stenography which were accepted at an earlier point in western countries; and the lack of vocational guidance in schools, which makes it even less likely that girls will consider continuing their education. At the same time certain broad social changes provide impetus for making the girl economically self-sufficient, such as the trend toward

smaller, planned families that releases the woman for work outside the home for a larger proportion of her adult life, and the gradual disappearance of the extended family with its group assistance, resulting in the need for more income as a nuclear or primary family group in facing the rapidly rising cost of living (446). The recommendation that as part of the program for reducing the Indian birth rate the legal age for marriage be raised, should likewise lead to more emphasis on, and opportunities for, education for girls.

Education of women until fairly recently has meant primarily ability to read the scriptures. Writing in the past was not looked upon favorably, and women had to learn many things about their domestic tasks from religious leaders. It was early in the nineteenth century that foreign missionaries and later Indian social reformers began to stress the need to educate women. This movement led to voluntary efforts to establish schools for them. The East India Company, which was largely responsible for Indian education as late as 1858, provided education only for males. Gradually public primary schools for girls began to be established in some states, and later some secondary schools were opened. Opportunities were expanded in this century, particularly since independence. The First Five Year Plan proposed a 10% increase in boys' primary education, (from 59% to 69%) and 8% for girls (from 25% to 33%). In the Second Five Year Plan an increase of only 3% was allowed for the 14-17 age group in middle and secondary education. Percentages vary considerably from state to state for girls as a whole and for urban versus rural groups, as shown by this table (446):

State	Percentages of girls aged 6-11 attending School		Percentage of girl aged 11-14
	Rural	Urban	
Assam	42.1	44.8	15.3
Kerala	65.0	100.0	33.0
Punjab	26.9	74.7	9.1
Maharashtra	17.6	100.0	10.3
Bihar	13.9	15.7	2.4
Uttar Pradesh	18.4	38.1	3.9
West Bengal	22.8	100.0	11.7

In comparing enrolments of boys and girls in primary education in 1965-66, nearly twice as many boys were enrolled in that year; the percentages of boys and girls respectively in their age groups in the general population who were enrolled in primary school were 90.2% and 47.6%. In 1967 a former Minister of Education stated that the goal of universal primary education was very near achievement in the case of boys, but that half of the girls of India were still out of school. A particularly noticeable imbalance persists between boys and girls at the secondary and higher levels of education (165). However, a 1966 report from the Ministry of Education urged the expansion and improvement of education for women, and of their opportunities for vocational training and employment.

Boys and girls have traditionally been educated separately in India, though there is now a tendency toward more coeducation. Actually practices vary greatly throughout India in both regular and special schools. Among special schools, most of those for the blind and for the deaf are just for boys, only occasionally including a much smaller attached unit for girls. As a rule, special educational facilities for girls are far more limited than those for boys (187).

A Ministry of Education report in 1966 emphasized that the Constitutional Directive on compulsory education up to age 11 includes handicapped children. This requirement has not been enforced, however. Parents often use even a mild handicap as justification for keeping their child at home, and the authorities permit them to do so (187). The 1966 report indicated the hope, nevertheless, that for children in general five years of education (6 to 11 years) will be provided by 1975-76 and that an additional three years (11 to 14 years of age) will be provided by 1985-86.

Universal free public education has not yet become a reality in India. Primary education up to the fourth class is free throughout India, and up to the eighth class in all Union territories and in nine states (446). In most states a means test is used beyond the fourth class, with no fees paid when the family income is below a specified level. The state of Maharashtra has such a means test, but in recent years it raised the family income level for free

education for its children from 900 rupees a year to 1,200 rupees a year (187).

Limitations in public provisions for education are indicated by the fact that a quarter of all elementary-school pupils are attending private schools, and nearly all of these are subsidized by the government, even though these schools generally cater to children from the upper classes. Among the South Asian countries, India has the highest proportion of fees in relation to total educational expenditures — 17.2% (281).

As indicated earlier, responsibility for education of the handicapped was first entrusted to the Ministry of Education, and then in June 1964 to the Department of Social Security, now known as the Department of Social Welfare (162). This is the reverse of the course of events found in most western countries, where other ministries have yielded their responsibilities for special education to the Ministry of Education (442).

A broader range of educational and related medical services is available in urban centers than in rural areas, as illustrated by the services provided in the city of Bombay. Free and compulsory education was introduced here for the first time in 1925 under provisions of the City of Bombay Primary Education Act of 1920. The arrangement applied first only to certain wards, and then in 1940 was extended to the rest of the city, applying to all children in Greater Bombay between the ages of 6 and 11. Ten languages are taught in the city schools in order to provide for many different mother tongues, though Marathi, Gujarati, and Urdu are the three major language groups. In the decade from 1956-57 to 1966-67 the number of schools increased from 605 to 988 and the number of pupils enrolled more than doubled — from 243,522 to 514,455. Though no coercion is used to force attendance, about 95% of the school-age children are enrolled in primary schools. Free milk, snacks, and medical treatment facilities are provided. CARE and Catholic Relief Services assist in the school food program. In addition, vocational training is provided in eleven vocational schools, with instruction in such crafts as carpentry, tailoring, clay-modeling, clock-repairing, bookbinding, and toymaking. The Bombay

Municipal Corporation was the first statutory body in India to set up a research Unit in 1955 to obtain reliable data on such matters as dropouts, and to study means of improving instruction (410).

The children in the municipal primary schools are given two medical examinations, in the first and third grades respectively. Defects noted by the medical officers are indicated, in writing, to the parents or guardians of the children. Children needing further check-ups are referred to school clinics in the municipal general hospitals. A child may also be referred at other grade levels for medical check-ups if the teacher or parents consider this desirable. Minor ailments are treated in the schools. Spectacles, appliances, and prostheses are supplied free of charge to needy children. One full-time dental clinic treats children with dental defects. Children found to be suffering from infectious diseases such as tuberculosis and leprosy are given treatment in the Infectious Diseases Hospital, and return to school only after having been certified as non-infectious by the hospital authorities. School children are routinely immunized against such diseases as small-pox and typhoid. Parent cooperation is secured through home visits; for example, in 1965 a total of 5,321 home visits and 846 revisits was made by School Health Nurses to advise parents of ailing children as to their proper care and diet. A broad program of health education was conducted concurrently.

Although it was reported in 1967 that there are regular medical examinations of school children in all schools in India once a year, this represents almost certainly a goal rather than an actuality. Such a service is more frequently found in large urban educational systems like that of Bombay.

The Education Officer in the Ministry of Social Welfare has classified the handicapped children who need special educational services as follows (2):

1. Pupils with intellectual retardation
 - a. Educable retarded
 - b. Trainable retarded

2. Pupils with speech problems
3. Pupils with impaired hearing
 - a. Deaf
 - b. Hard of hearing
4. Pupils with impaired vision
 - a. Blind
 - b. Partially sighted
- 5 and 6. Pupils with neurological and non-sensory physical impairment
 - a. Crippled
 - b. Chronic health cases
 - c. Brain-damaged
 - d. Epileptic
7. Pupils with behavior problems
 - a. Emotionally disturbed
 - b. Socially maladjusted

Many early provisions for education of the handicapped were initiated by missionary groups. Most special institutions for the care, training, and education of the handicapped are still run by voluntary organizations with some state government assistance and do not charge fees. Provisions vary greatly from one region or community to another, but most institutions provide primary education combined with training in a few simple handicrafts, including music for the blind (150). Vocational training is more frequently given in residential institutions than in day schools.

It is difficult to arrive at any one set of figures, on which all authorities agree, concerning the number of schools provided for children with different kinds of handicaps (150, 162, 448). The totals given in various sources include a great variety of centers and programs, many of which are not actually schools or which do not include specific educational services. Information concerning the sex and age group served, the number accommodated,

and the basis for admission is often not available. The Department of Social Welfare of the central government is currently compiling a handbook with detailed information about special institutions, but so far this has not been published. The Central Ministry of Education has conducted several sample surveys which have yielded some information about the number of special institutions and their personnel and training facilities. Meanwhile the *Journal of Rehabilitation in Asia* has been serving as a clearinghouse for information of this kind, providing from time to time lists and amended lists of institutions serving various categories of the handicapped.

It is evident that only a small proportion of the handicapped in each category are receiving any kinds of service, including education. The 1966 Ministry of Education report indicated the following estimates of the number of school-age children in four categories of the handicapped, with the mentally handicapped now included in its consideration (150):

Blind	400,000
Deaf	300,000
Orthopedically handicapped	400,000
Mentally handicapped	1,400,000

For blind children there was in that year a total of 115 schools and other establishments with an enrolment of 5,000, or a little over 1% of the total blind children in the country. Not all these institutions could be considered schools, however, and all the 5,000 children were not necessarily receiving education.

A recent compilation of institutions for the handicapped in India prepared by the Indian Conference of Social Work provides the following totals:

Blind	126
Deaf	99
Mentally retarded	53
Orthopedically handicapped	41

For each category the largest single number of "institutions" is found in Maharashtra State, with totals for this state of 22, 18, 18, and 7 respectively. As in the Ministry of Education report, the term "institutions" is very loosely used; there is no clear indication as to the nature or extent of schooling provided in those cases where the word "school" appears in the title, and in a few instances a special class is referred to, or an organization interested in the problems of a particular group, or an institution providing for more than one type of disability. For example, among the places listed for the mentally retarded, there is a Chronic Diseases Home in Andhra Pradesh that from now on will not accept the mentally retarded, and a Home for the Aged and Handicapped in Nagpur. As yet no figures are available concerning the numbers served, the relative numbers for the two sexes, the age range, the nature and scope of services provided, length of stay, or basis for admission. A long list for leprosy patients includes primarily associations, homes or asylums, and hospitals and other centers or clinics for medical treatment, for none of which reference is made to schooling.

The fact that many schools and institutions for the handicapped have appeared in India only in recent years makes it very likely that earlier lists will need constant revision as new information is published. For example, a recent article indicates that there are 31 voluntary and governmental institutions to meet the needs of an estimated 400,000 handicapped persons in the State of Gujarat, and of these institutions 17 were founded in the period between 1960 and 1966 (75).

The report of the 1966 Seminar in Poona on the Vocational Rehabilitation of the Handicapped listed institutions serving different categories of the handicapped. It was recognized that these lists were incomplete, and readers were urged to send additional information.

	Blind	Deaf	Mentally Retarded	Orth-Hand.	Leprosy- affected
Andhra Pradesh	5	3	1	5	19
Assam	1	1			4
Bihar	9	3	1	2	24
Gujarat	14	7	4	2	15 plus 35 S.E.T.*
Kerala	6	5		2	7 plus 149 S.E.T.
Madhya Pradesh	5	4		2	7
Madras	9	6	1	2	26
Maharashtra	21	18	15	7	24 plus 2 S.E.T.
Mysore	6	4	1	2	16 plus 8 S.E.T.
New Delhi	4	4	8	2	3
Orissa	1	2			3
Pondicherry	2			Manipur	6
Punjab	7	4	1	3	4
Rajasthan	3	2			1
Uttar Pradesh	15	15	2	2	6
West Bengal	6	7	2	8	10
Jammu & Kashmir	2				
Total	116	85	36	39	175 plus 194 S.E.T.

*The S. E. T. is described in the section on leprosy.

It is difficult to indicate the leprosy services numerically since they vary so much in nature. It is also true for each list that the nature of the "institution" or service varies considerably insofar as one can determine from the table. No indication is given in this listing as to the number of persons served where day or residential facilities are provided.*

*Obviously some of these totals have changed even in the past few years, most noticeably regarding provisions for the mentally retarded, for whom a total of 63 institutions is stated in a report bringing the data up to date as of January 1968 (53).

There is no listing as yet of the provisions made for the education of non-infected children of parents with leprosy, or

for children in whom leprosy has been arrested. Separate schools as such are not usually established for them. A sanitarium may provide special classes for a few children with leprosy-affected parents, or another institution may have classes for children *with* leprosy. A home and school for these children may be combined in one institution. They are not prohibited from attending regular schools, if they themselves have not had leprosy or if the infection is arrested, and in many places they are being quietly integrated into homes provided for other children. It is recognized that it would not be desirable to list them or to draw attention to them in other ways. It is believed by some authorities that if a diligent search were made by a social worker, relatives of these children could be located who would take them into their own homes. At the same time, school authorities realize that there are undoubtedly children with active leprosy attending regular schools who need to be identified and given appropriate treatment (187).

Even in the pre-independence period the Central Advisory Board of Education, in a report on the needs of various handicapped groups, was guided by the general principle that segregation from normal children should be regarded only as a last resort. It was recognized, however, that the blind and deaf more frequently than other groups needed special educational arrangements with specially trained teachers (394). Almost all the provisions existing at that time took the form of residential institutions, and this pattern of segregated education and training has continued to dominate the picture until recent years.

While integration of the handicapped is one of the important goals in special education in India as in other countries, there are different points of view as to the best way and the most feasible way to achieve this goal, and therefore residential schools will continue to play an important role, particularly in developing countries like India (2).

Day schools and special classes in regular schools are still very few in number, and only a token number of handicapped youngsters have been admitted into experimental programs of integration into regular schools, but there is increasing awareness of

the importance of integration for the handicapped in education as well as in vocational and social spheres.

The most complete information concerning services for the handicapped, including educational services, is available for Maharashtra State and its principal city, Bombay. Facilities for education and for vocational rehabilitation are steadily expanding, with both government and voluntary agencies providing such services. There are 10 schools for blind children, 12 for deaf children, 7 for orthopedically handicapped children, and 4 for mentally retarded children. Sheltered workshops for handicapped adults and vocational training facilities for handicapped school-leavers are being established. Experiments with integrating blind children into regular schools are in progress (370).

For handicapped persons the following types of institutions were provided in Maharashtra State in 1966 (132):

Type of Institution	Govt.	Voluntary	Total	No. of beneficiaries
Schools for the blind	3	7	10	610
Schools for the deaf	2	10	12	427
Schools for the crippled	2	5	7	310
Schools for mentally retarded	0	3	3	348
Workshops for the blind	0	6	6	350
Workshops for the deaf	1	2	3	54
Workshops for the crippled	0	2	2	211
Homes for aged and infirm	0	14	14	242
Centres for rehab. of leprosy-affected persons	0	8	8	800
Totals	8	57	65	3,352

This represents the following increases in provision over a four-year period:*

Number of Special Schools for Handicapped Children					
Year	Blind	Deaf	Ortho. Hand.	Ment. Hand.	Total
1961-62	8	8	4	3	23
1965-66	10	12	7	3	32

*A 1967 report (370) on rehabilitation services in Maharashtra State gave similar totals, except for adding one sheltered workshop for the orth-

The special institutions serve the following numbers of persons: (132)

Number of Handicapped in Special Institutions

Year		Blind	Deaf	Orth. Hand.	Ment. Hand.	Total
1961-62	Children	519	383	128	277	1,307
	Adults	210	51	70	0	331
	Total	729	434	198	277	1,638
1965-66	Children	610	427	310	348	1,695
	Adults	350	54	211	0	615
	Total	960	481	521	348	2,310

These figures indicate a 41% increase in the number of handicapped persons placed in special institutions over a four-year period.

It is to be expected that educational opportunities for the handicapped will be greater in those states where educational opportunities for the normal population are greater. For example, the per capita expenditure on education is the highest in the state of Maharashtra and the lowest in Orissa, whereas the enrolment percentages for both boys and girls are the highest in the state of Kerala.

Each year the central and state governments award scholarships to blind, deaf, and orthopedically handicapped students for continuing their education, the application forms usually being sent from the department or directorate of social welfare to the head of the educational or vocational institution which the student

Contd.

opedically handicapped, and another recognized voluntary school for the mentally retarded (for a total of four rather than three). It is not clear in what category appear the two schools in Bombay, at Sewri and at Varsova, for physically handicapped children who are also mentally handicapped (51).

attends (370). During the Third Five Year Plan the central government awarded 1,876 scholarships to meritorious handicapped students, of whom 535 blind students and 942 orthopedically handicapped students have successfully pursued courses in regular schools and technical institutes (162). In 1966 the state of Maharashtra had awarded the following number of scholarships (132):

Scholarships for Physically Handicapped Students

Year	No. of Applications	No. of Beneficiaries
1961-62	157	121
1962-63	451	142
1963-64	356	131
1964-65	607	231
1965-66	630	307
1966-67	642	398
Totals	2,843	1,330

Since both state and national provisions for the handicapped come within the jurisdiction of departments of social welfare, the scholarships are listed as a welfare service rather than as an educational service.

The scholarships provided by the Government of India Department of Social Welfare stipulate that those eligible are blind or deaf students 16 to 30 years of age, and orthopedically handicapped students 12 to 30 years of age, who wish to continue with general education or vocational, technical, professional, or apprenticeship training, and whose parents earn no more than 1,000 rupees per month. The full scholarship is available only when parents earn no more than 500 rupees a month (and two-thirds when income is between 500 and 750 rupees, one-half when income is between 750 and 1,000). In special circumstances additional aid is provided such as payment for the purchase and maintenance of prostheses, a monthly transportation allowance, and an allowance for a blind student's reader. The program taken must be in a school or institution recognized or approved by the state or central government. The scholarship does not

apply for study outside India, or for a research program as in obtaining a Ph.D. degree. For students already enrolled in an approved educational or training program, the application is forwarded through the head of the institution concerned. The decision of the Department of Social Welfare is final, and reasons for rejection are not indicated. The scholarship may be cancelled if the student fails to pass an annual examination or makes unsatisfactory progress over a six-month period even when given warnings concerning this lack of progress.

In spite of such incentives, relatively few handicapped children continue into post-secondary or higher education. This is not surprising in view of the small proportion of normal youth who receive advanced education. Although the percentage increase in enrolment has risen more rapidly in India for post-secondary versus primary or general secondary education, less than 2% of the age group continues to this level, and about half the students who do so never complete degrees — 51% of the arts students and 48% of the science students. There is a direct correlation between the income level of the family and the percentage obtaining degrees; as one study indicated, only 28% of those whose fathers were illiterate passed their examinations. Only a small proportion take technical or specialized courses, and many seeking such training go to foreign institutions and then remain abroad to pursue their careers, even though their services as engineers, scientists, physicians, and dentists are badly needed at home. Added to this is the problem that the relatively brief secondary education and the consequent low age range of Indian students in higher education produce what many educators consider to be a level of education corresponding to that of secondary schools in Europe and the U.S.A. Problems of teacher recruitment occur in higher education as well as in primary and secondary schools, since at all levels salaries and social prestige for teachers are low (281).

The fact that few handicapped youth continue into post-secondary education is not necessarily a disadvantage to them or to the country as a whole. Some believe that secondary and higher enrolments ought to decrease rather than increase, with

more emphasis on improvement of the basic primary education, and on reforms making the entire system more functional and meaningful. Higher education is, as indicated, academic in most cases, and since it adds to the growing number of discontented "educated unemployed" seeking administrative jobs, the opportunities of this kind for the handicapped are understandably even more limited than for normal youth. The vocational orientation of most special education is likely to provide handicapped youth with occupational skills far more necessary to the Indian culture than would the present type of academic university education.

Education for children in hospitals is increasingly available. In Bombay the Bai Jerbai Wadia Hospital for children pioneered in education for children in hospitals by employing two trained teachers in February 1949, paid by the state government, to work under the supervision of the Tata Institute of Social Sciences. Regular primary education is provided for children in the two chronic and orthopedic wards for children under 12 years of age. Also in 1949 the Children's Orthopaedic Hospital employed a full-time Montessori-trained teacher to supervise a room for out-patient children between treatments or waiting for a bus to take them home, and for in-patient children when it was possible for them to join the group. In 1953 the Municipality began to provide teachers to conduct more formal classes, comprising a supervisor with two assistants who could together teach in Hindi, Marathi, and Gujarati. One limitation in this program is that the teachers take the regular school holidays and vacation periods, with the result that these children, who need continuous daily assistance, lack the help of the teachers for a total of several months during the year.

Another important pilot project in Bombay emphasizing early detection and treatment of disabling or potentially disabling conditions is a Child Guidance and Service Centre inaugurated in March 1967 as a joint project of the Sardar High School of the Bharat Education Society and the Bombay Committee of the Indian Society for the Rehabilitation of the Handicapped. The project will have four divisions: (1) a survey of children to detect visual problems, deafness, simple orthopedic handicaps,

cardiac and respiratory problems, and epilepsy, with help and guidance given to parents to encourage the securing of immediate treatment; (2) detection of mental and emotional problems; (3) vocational guidance and training for those of more limited academic ability, with the initiation of a Technical Training Section; (4) a search for the more severely handicapped in the homes of pupils, such as cases of polio, cerebral palsy, and spina bifida. It is hoped that early detection of leprosy symptoms may also be included when the full confidence of parents, pupils, and staff has been secured (330).

Educational services should include specific guidance and counselling services. An important private venture in this field is that of the St. Francis de Sales' College in Nagpur, which in 1961 established a Psychological Test and Guidance Centre. In the first year and a half, more than 2,000 students, children, and adults were given tests of intelligence, aptitudes, interests, personality adjustment, and achievement as well as diagnostic tests for visual and auditory defects, reading speed, and comprehension. The free services provided include vocational and educational and child guidance, along with lecture courses and parent counselling at the school for mentally retarded children. Family and marital counselling accompany guidance for maladjusted children and details. About 25 teachers and other professional workers attend guidance courses twice a week in two trimestral terms, of whom 15 have received private diplomas in Proficiency in Psychometrics and Guidance techniques. On request, tests were also given in Bombay schools as well as in Delhi, Simla, and Mangalore. The first summer courses were opened in Simla in April 1962. Group intelligence tests were also administered in Nagpur and other cities to over 1,200 children and students (155).

The pediatrics and occupational therapy departments of the Medical College Hospital at Nagpur (reputed to be the largest in Asia) refer children to the Centre for free mental diagnosis and measurement twice a week plus therapeutic prescription. These children have various handicaps such as epilepsy, brain damage, cerebral palsy, deafness, and mental retardation. There

is a Guidance Counsellors' Association to keep in touch with the graduates of the courses. A major expense is the pioneering experimental research sponsored by the Centre which includes projects for constructing and adapting standardized tests for Indian use.

An adequate guidance program necessitates the development and use of a wide variety of appropriate tests. The last decade saw a rapid growth of interest in the use of mental tests, resulting in publications such as the 1966 "First Mental Measurement Handbook in India," produced by the National Council of Educational Research and Training. The testing movement appeared some 15 to 20 years later than in western countries, where the first tests were developed for the purposes of measuring mental deficiency and for selecting military personnel. In contrast, in India the first tests were constructed only in teacher-training institutions to provide experience in research, and thus the tests produced as part of the work toward a master's degree usually had a narrow regional bias. Foreign missionaries actually developed the first tests (246).

In 1927 Manry published the first intelligence test in English, Hindi, and Urdu, followed two years later by Rice's Hindustani Binet. There ensued a burst of activity on the part of Indian educators, as shown by the listing of 100 tests, 12 of which were individual tests, in the 1966 handbook. Malin has developed an Indian adaptation of the Wechsler Intelligence Scale for children. Among the tests available, however, there is little choice for the assessment of the intelligence of the mentally retarded, especially since it is only in four or five major languages that there are any tests at all. Some cases of cerebral palsy are combined with groups of the mentally retarded, for example, but there is no way of knowing how many of the cerebral palsied are really mentally retarded because as yet there is no way to assess their intelligence adequately. Most useful are various adaptations of the Binet scale (246).

Efforts are being made to provide special training for teachers working with various handicapped groups. The Government of India has established three training centers for teachers of the

blind in Delhi, Bombay, and Narendrapur (near Calcutta) (145, 162). These three programs train between 30 and 40 teachers of the blind each year. In addition, according to the 1966 Ministry of Education report, the state governments of Madras and Andhra Pradesh conduct courses of this kind "when needed." The three centrally sponsored programs are run by voluntary agencies and financed entirely by the Government of India.

With the exception of a new program for teacher-training in the Model School for the Mentally Retarded in Delhi, other programs have been left to state and voluntary financing. There are five training centers for teachers of the deaf in Calcutta, Lucknow, Ahmedabad, and Hyderabad, for which most of the operating costs are borne by state governments. The costs of the training programs for teachers of the mentally retarded in Chandigarh and Bombay are also borne primarily by the state governments. A few scholarships are available for training abroad, though some teachers obtain such training at their own expense (145).

In Bombay, as elsewhere, the training of special teachers is conducted by voluntary agencies. Teachers of the blind are trained at the Victoria Memorial School for the blind; teachers of the deaf at the Education, Audiology and Research Centre; and teachers of the mentally retarded at the School for Children in Need of Special Care. There has been some difficulty in recruiting trainees for these programs because the salaries for special teachers are low (370). This is a general problem in the country as a whole, because instead of getting a special increment as in most western countries, these special teachers may actually earn less than regular teachers, work under more unfavorable conditions, and find less prestige associated with teaching handicapped children than with teaching normal children.

In view of India's limited resources, and the costliness of special education as compared with regular education, some think it preferable to give attention first to those most likely to become economically self-sufficient (2). Possibly a more effective approach to the problem of providing for crippled children would be that of making alterations in

existing schools which would enable these children to attend them, rather than to establish separate special centers or schools to serve only a relatively few severely handicapped children whose potentialities for rehabilitation are more limited. The same level of expenditure would serve a much larger number of children as a result (51,187), though as funds and facilities permit provisions could be made later for the somewhat smaller number of more severely handicapped children. Such a program would also demonstrate the feasibility of the ultimate goal of integrating all kinds of handicapped children into the regular schools. For this process of integration to succeed there must be careful orientation of the other children in the school as well as the teachers, the parents of the normal children, and other adults in the community.

Ideas and practices borrowed from western cultures must be adapted to the special needs dictated by the situation in India. The games and forms of play found in other countries may involve expensive, elaborate, or non-available equipment and facilities. Indians need to adapt their indigenous games along educative lines. A number of them actually resemble western games, as in the case of marbles, cricket, and Meccano activities with sand and stones rather than wood or metal. The Montessori and kindergarten systems of the West are likewise too elaborate and expensive for India, which also has few teachers qualified to conduct such programs. Modest beginnings are important at this stage, using the commonly found pebbles, twigs, and "package splinters" (215).

The Ministry of Education considers it a reasonable objective by 1968 to provide special education for about 15% of the blind, deaf, and orthopedically handicapped children and 5% of the mentally retarded, or for about 10% of all handicapped children (149). The experience of more highly developed countries indicates that there are advantages and disadvantages to the integration of handicapped children into regular schools, but it is recognized as important to experiment as widely as possible with programs of integration. It is also recognized that special educational provisions will be needed for other handicapped

groups not included in the four basic categories listed previously, groups such as the partially sighted, speech-handicapped, brain-injured, and emotionally disturbed. No attempt is made to estimate the numbers of children in these categories, and there will be problems in providing facilities for training special teachers for them. The Ministry of Health has set up an institute for training speech therapists at Bangalore who will work with speech handicapped and aphasic children, but practically no facilities as yet exist for training teachers for these other groups, and therefore pilot programs of this kind are needed, followed by a review of the total problem ten years hence. No reference is made to the partially hearing in these plans, however (267).

Certain factors must be kept in mind while developing such programs :

(1) The preparation of specialized teachers is of major importance. On the basis of a teacher-pupil ratio of 1 to 10, a total of about 16,500 teachers will be needed for blind, deaf, and mentally retarded children alone. This will necessitate expansion of existing training centers and the establishment of many new ones.

(2) Coordination will be needed in the services provided by public and private agencies such as the Ministry of Education, the Central Social Welfare Board, the Ministry of Health, and voluntary organizations. Such coordination is needed at both the central and state levels.

(3) Research on the problems of special education is urgently needed.

(4) Information concerning the needs of handicapped children must be made available for all the specialists serving them. An effort to create such awareness is represented by projects under consideration by the Indian Conference of Social Work, including summer workshops for social workers on rehabilitation concepts, and short courses for regular teachers concerning physically handicapped children (187).

The 1966 Ministry of Education report concluded that very little on the whole has been done so far in the field of special education, and little improvement, for a variety of reasons, seems likely in the near future. At the same time, it was recognized as important that a serious effort to start or to extend provisions of this kind must be made (150). The future of special education is intimately intertwined with that of education in general, where there is need for many changes and improvements which face the obstacles of limited financial resources and entrenched traditional practices. Such changes include increased governmental regulation of the quality and structure of educational programs, more effective control of irregular attendance and dropping out, the training of better prepared and better motivated teachers, improvement in the status of teachers and teacher-training, more realistic and less artificial and rigid academic instruction, and improvement in the physical equipment and supplies of the schools. Perhaps the most serious single obstacle to the extension of education in Asia as a whole is the scarcity of paper for writing and for printing books and other educational materials (281).

Chapter 4

THE MEDICAL SERVICES

Medical services in India are faced with varied and serious problems. Infectious diseases produce more death and disability in India than in the West (281). About half a million persons die of tuberculosis in India every year, and 5,000,000 to 10,000,000 need treatment for this disease annually. Although 20,000,000 children were born in Maharashtra State between 1952 and 1967, only about 200,000 newborn infants were given BCG vaccinations in that 15-year period. In 1963, of the 93,000 smallpox cases reported for the entire world, nearly two-thirds (60,000 cases) were from India. In the 1965 epidemic in the city of Bombay alone, one hospital admitted 1,002 children with smallpox in a period of four months. And though a combined vaccine to give immunity and protection against diphtheria, whooping cough, and tetanus has been available in India for about 20 years, these diseases still pose a serious threat to Indian children. In 1966 there were more than 800 cases of paralytic polio reported from different hospitals in Bombay; only one out of five children in the vulnerable age group from birth to five years received the polio vaccine (469). Malaria has been the number one health problem in India; in 1953 alone there were 75,000,000 cases of the disease and more than 1,000,000 deaths attributed to it, though by 1970 it is expected that there will be only sporadic cases (464).

Industrial and traffic accidents are increasing rapidly. There were 28,654 accidents in Greater Bombay during 1961, of which nearly 63% were the fault of pedestrians. The influx of people

into the city who have been accustomed to the more leisurely pace of village life accounts for this in part, and the rapid tempo of change in vehicular traffic causes difficulties even for those who have always lived in the city. Overcrowding in trains causes railway accidents, which are the most common and the most mutilating of accidents. It is not unusual to see people boarding a moving train or hanging precariously from crowded doorways (263).

Since the conditions that cause disability are closely related to such factors as the standard of living and the level of medical services, programs of prevention are needed. Immunization will almost entirely eliminate polio. Adequate nutrition will help substantially in reducing mental retardation through decreasing the number of premature births and giving infants a chance to achieve their potential for full development.

Perhaps nothing is more important in the field of positive health of children in this country than ensuring good nutrition and immunization against diseases (469).

The Indian Council of Medical Research has established nine specialized research centers such as the Virus Research Centre in Poona and the Poliomyelitis Research Unit in Bombay, but it will take a long time to make available enough polio vaccine to treat the entire child population (281).

The problem of infectious diseases will persist until conditions such as overcrowded housing and poor sanitation can be improved. A 1956 survey in the city of Calcutta indicated that more than 42% of the households had an average of only 30 square feet of room space per person, and another 20% had only between 30 and 80 square feet (52). It was estimated that in 1962, 70% of the people living in urban centers lacked a proper water supply, and only 3% of the general population even now enjoy the advantages of a sewer system. Even when sanitary conditions have improved, there will remain the problem of changing long-established unhygienic personal habits and social customs derived in part from unfavourable living conditions. Gandhi made strenuous efforts to educate the general populace concerning the

utilitarian, moral, and religious values of improved habits related to health and cleanliness, but certain obstacles to this reform persist. For instance, the persistence of the caste system of which Gandhi also disapproved, in which cleaning jobs are allocated to the "untouchables," accounts for the fact that the more "clean" a person aspires to be, the less willing he is to handle dirt in any form (281), and the more difficult it is to get him to participate in the "do-it-yourself" aspects of anti-pollution and other environmental improvement programs.

With more than 80% of the population living in 700,000 villages scattered over the country with poor intercommunication, and with 60% of these villages containing less than 500 people (411), most villagers lack adequate medical services and do not know what to do about a congenital deformity or a crippling disease or an accidental injury when one occurs; they do not know what services might be available or how to go about seeking reputable service. They may also be unable to afford the cost of such service, and since specialized medical and surgical treatment is usually available only in large urban centers, they may not be able to travel there for such treatment and undergo a long convalescence or a stay in a nursing home. When treatment is sought, therefore, people are likely to consult "medicine men," herb prescribers, or door-to-door sellers of locally concocted medicines. It is a tragic irony that many handicaps are not only worsened but may also be supplemented by other handicaps caused directly by such inexpert treatment, as in the case of blindness (52).

Although the superiority of scientific western medicine over indigenous medicine had been demonstrated to the satisfaction of colonial authorities and at least the top strata of Indian society long before independence was achieved, and although schools of indigenous medicine were closed one by one (281), the persisting lack of trained medical personnel makes it likely that the village practitioners will continue to flourish for some time to come. There are only 85,000 trained medical doctors in India versus literally hundreds of thousands of "vaidyas" and "hakims," the local practitioners whose ministrations the Health Minister

considers to be of dubious value. There is at least one such practitioner for every village, and since 85% of the trained doctors practice in urban areas where at most only 20% of the general population live, these untrained persons "retain the confidence of the villagers, without competition" (236). It has been estimated that the medical needs of at least four-fifths of the Indian population are still being met by these traditional healers.

Though there are some clinics, hospitals, and dispensaries even in small communities in India, facilities for the identification and treatment of handicapping conditions are found only in larger urban centers. Preventive and treatment services are unlikely to be available in the villages where most of the people live. An example of an effort made with international assistance to meet the needs of this rural majority is a demonstration project supported by the U.S. Social and Rehabilitation Service, consisting of a mobile hospital which travels to rural villages to open new "eye camps." People who need medical care and treatment for their eyes, who have been located in advance by the rehabilitation team, come to the camp, usually bringing a bed along. After these patients have received the surgery and treatment they need and have had a period under observation, they return home, and the "eye camp" moves on to another village where still other patients are waiting (113). Although a valuable beginning, this service as yet is important as a demonstration of what can be done rather than in terms of making real inroads on the needs to be served.

Even when a hospital is accessible, the limited personnel, space, and facilities result in acceptance of only the more serious cases, and their early discharge before rehabilitation procedures have been completed. But there are no convalescent homes in India for patients needing long-term recuperation, for whom a brief hospital stay is not sufficient.

Efforts at rehabilitation are further complicated by the Indian client's naivete concerning the nature and purpose of modern rehabilitation techniques (261). A person who has all his life sought help in superstitious rituals, charms, and bargains with

the gods may find it difficult to understand the real significance of rehabilitation procedures.*

Social and psychological factors complicate the adoption of desirable preventive measures, as illustrated by the problem of a special form of cancer found in India that is almost completely unknown in the U.S.A. and Europe. Betel quid cancer results from the Indian habit of chewing betel leaf or betel nut. The tumor usually occurs in the lower left lining of the cheek, and may perforate the external cheek especially if it has been cauterized by a village "healer." A third of all new cancer patients registered in one year at the Christian Medical College in Vellore had cancer of the mucous membranes of the mouth or gums, in contrast to only 4% oral carcinoma cases among new cancer patients reported in one year to the Connecticut Tumor Registry in the U.S.A. Betel chewing in all social classes is sanctioned by ancient religious and social customs. The fact that 64% of the Vellore cases were on the left side of the mouth is said to result from ancient Hindu religious teaching that the right hand is the clean one for touching food, and therefore a quid inserted with the right hand more easily moves to the left side of the mouth. Some workmen chew all day long, and some even sleep with a quid in the mouth. Of 123 betel-chewing cancer cases at Vellore, 54% chewed one to five quids daily, and 7% chewed more than 20. About 60% of the persons either were given no treatment because they were inoperable, or failed to return to the hospital after their initial visit (43). Even when the medical factors are more clearly understood, there will still remain the problem of coping with the social and psychological factors supporting the habit.

It is axiomatic that medical treatment cannot be divorced from the personal and social needs that accompany the physical defect. Of the 500 orthopedically handicapped persons interviewed in one study (52), 49% were unmarried, and of these nearly two-thirds were unmarried because of the disability itself or the disability combined with the financial problems it created. Only

* At a 1968 research conference at Trivandrum, cases were cited illustrating how even well educated Indians often in times of stress revert to a dependence on nonscientific explanations and attempted solutions for their problems.

19% required the assistance of others in carrying out their daily activities. More than a third (34%) reported no leisure-time activities, and most of these persons were illiterates. Of the hobbies reported, the highest percentage (17%) was for reading, and interestingly enough the next highest percentage (11%) was for sports and physical culture. About a fourth of the 500 (26%) reported having no friends at all. Only 15% reported normal reactions to their disability, the others indicating feelings of inferiority, shame, insecurity, or isolation. Most of those reporting normal reactions had only minor disabilities. About 28% of the cases were illiterate, and 34% either did not study at all or studied at home. Nearly three-fourths of those who did attend school were not accepted as equals by their classmates, though the brighter or less severely disabled were better accepted.

Medical treatment without social, psychological, and vocational services cannot effectively rehabilitate handicapped beggars. In Lucknow in 1967, a study was made of 100 handicapped beggars, of whom the largest percentage (46%) were blind, followed by the orthopedically handicapped (26%), those with leprosy (18%), and the deaf and dumb (10%). Only 20% were female, most of whom were either blind or suffering from leprosy, and 58% were in the age group 45-55, with none below the 25-30 age group. Half were married, 40% single, 10% widowers. As to religion, 58% were Hindus, 42% Muslim, with no Christian or Sikh beggars; the largest percentage came from the lower castes. Fifty-six per cent were illiterate. Seventy-two per cent had migrated from other villages and towns in the state, with only 28% who had been born in Lucknow, though over half had not moved for a period of at least five years. Income ranged from 20 to 90 rupees per month, the blind having the highest income. All had some other addiction, for alcohol or drugs or smoking or gambling. Of the total group, 60% were pavement dwellers, and those who lived with their families had poor relationships with them. Less than half (43%) were satisfied with their present earnings; most were dissatisfied, and disliked being partially dependent on their families. They spent most of their earnings on food, none on clothing or living accommodations, but did spend

money on drinks, drugs, tobacco, and the cinema; even some of those who were blind or had leprosy went to the movies. They deplored the growing indifference to the practice of giving alms. Among the ways of attracting attention was the exposure of their physical disability or disease while assuming a pitiful mien. They usually frequented places where people gathered for purposes such as marketing, religious worship, or recreation. Extreme sexual frustration was reported by 60% (429).

The complex needs of handicapped beggars illustrate the fact that such provisions as are available need to be organized and coordinated to a greater extent than at present, especially in the area of diagnosis and evaluation of the multiple factors affecting individual cases.

One of the greatest rehabilitation needs in India is a centralized and comprehensive evaluation service encompassing physical, psychological, social and vocational services (403).

It is emphasized that this evaluation service should not be restricted to any one category of handicap. The tendency in India, as in many other Asian countries, has been to develop special agencies to deal with a particular health problem, such as the National Malaria Eradication Project, the Family Planning Programme, and the Anti-Smallpox Campaign. Also as in other countries there may be duplication of effort and consequent inefficient use of resources by various agencies working on the same problem. For example, in the city of Vellore with a population of 150,000 there are three rehabilitation centers working with those disabled by leprosy; they provide sheltered workshop training in cottage industries, in the preparation of audiovisual aids, and in manufacturing machine parts respectively, but there is little integration among these programs.

It has been recommended that all medical college hospitals in every state have orthopedic, physical medicine, and rehabilitation departments. There are some hospitals that make special provisions for crippled children, such as the Children's Orthopaedic Hospital in Bombay, the Bai Jerbai Wadia Hospital for Children in

Bombay, the Polio Clinic in Hyderabad, and the Rotary Clinic in Calcutta, though even in these cities the pressure of long waiting lists leads to discharge before the process of rehabilitation is completed.

Even routine hospital care is accessible to only a small proportion of the general population. A third of the hospital beds available are concentrated in the 125 teaching hospitals located in urban centers. The smaller general hospitals have few facilities for special care; they often have poor dispensaries and kitchens, a limited number of trained personnel, poor maintenance of facilities, and conditions encouraging the spread of infection, such as overcrowding, unsatisfactory toilet arrangements, and dependence for routine care on relatively untrained persons or relatives of the patient. At the same time, housing conditions are in general so poor that satisfactory medical care can rarely be provided in the home environment (281).

Evidence of the need for medical services was provided by the Bangalore survey which pointed out that although 92 of the non-institutionalized persons included in the study used public transportation, their movements would have been facilitated by special aids like braces and crutches which they did not possess. War veterans were provided with wheelchairs or tricycles, but there was no evidence as to what was provided for the other institutionalized persons. It was pointed out, incidentally, that the number of handicapped women staying in institutions is relatively small.

In the Delhi survey, nearly 30% of the 221 handicapped persons studied had had no treatment at all for the handicapping condition. Of those who had had some form of treatment, 78% reported that the treatment had not helped them. The survey sponsored by the central government in the village of Kelod led to the conclusion by the investigators that the social milieu of the community was not compatible with health. The load of chronic disease, disorder, and defect was tremendous, provisions for the care and rehabilitation of the handicapped was greatly needed, and the people in this community like the rest of the general population living in villages were sadly in need of the benefits of modern medicine.

The extent of the need for rehabilitation for physically handicapped children is indicated by the experience of various hospitals. A partial list of the patients referred to the occupational therapy department of Niloufer Hospital in Hyderabad in 1966 provided a total of 267 persons in need of long-term in-patient or out-patient treatment (107):

Polio	108 cases
Hemiplegia	36
Cerebral palsy	37
T.B. meningitis	30
Encephalitis	13
Infantile paralysis	7
Mental retardation	3
Paraplegia	2
Other forms of paralysis	9
Inability to walk	4
Rheumatoid arthritis	4
Contracture knee joints	1
Fractures	1
Other minor conditions	12
	<hr/>
Total	267

Bombay is the only city with children's hospitals — two with a total of 250 beds. In hospitals attached to medical colleges there are beds reserved for children, the number varying from 25 to 50. There are four such medical college hospitals in Bombay, and one each in four other cities. In other general hospitals throughout Maharashtra State a few beds, from five to 15 in number, are reserved for children. The number of beds is far too few in proportion to the total number of children, and the personnel caring for them are usually not well trained. Chief attention is given to the relief of acute conditions, with little follow-up of those released. Child guidance clinics are now attached to teaching hospitals and in better equipped hospitals, and here the mentally handicapped are taken care of. Special departments for the deaf and the blind are being formed. Preventive services now available are vaccinations of various kinds, and health and acci-

dent-prevention education, but many fail to get the smallpox vaccination, and are not revaccinated often enough (88).

Bombay has nine institutions with facilities for treating and rehabilitating children with minor and moderate handicaps, besides giving some help to the severely handicapped :

Municipally owned and managed: three

State run : three

Central Govt. with some municipal and state assistance: one

Run by voluntary organizations : two

All but two have orthopedic surgeons; all have physical therapists, occupational therapists, and medical social workers. Voluntary organizations such as the Children's Aid Society and the Bombay City Council for Child Welfare help in special education projects from time to time.

An acute shortage of trained rehabilitation personnel continues to limit medical services for the handicapped. In 1967 there was a total of about 125 orthopedic surgeons in India, with an annual increment of 15 trained in India and abroad. Although at the beginning of the Second World War there were hardly any fully trained orthopedic surgeons in India, there are now such surgeons in most of the larger cities. However, the usefulness of such a specially trained surgeon is limited by a lack of trained orthopedic nurses; inadequate accommodations for patients; lack of a national plan for a campaign along the lines of prevention, early discovery, treatment and after-care of crippling conditions; lack of the team concept of cooperating services in rehabilitation; and the fact that the specially equipped and staffed hospitals started during the war for rehabilitating the injured were not continued in operation. Orthopedic surgeons particularly need the support of occupational therapists and physical therapists in handling their cases, and although the number of such paramedical personnel is increasing the total still falls far short of the number needed (279).

Fortunately there has been a steady increase in the number of medical schools and students. Medical colleges numbered 15

in 1946 and 81 in 1965, with an enrollment capacity for new students rising from 1,200 to more than 10,000. However, the number actually graduating has not increased proportionately, because the training period has also been lengthened. The distribution of the physicians trained is uneven; in 1960 the ratio of doctors to population in urban areas was five times greater than that in rural areas (281). The steady increase in the number of primary health centers designed to provide an integrated pattern of services outside urban areas may partially correct this problem if medical personnel can be attracted to them.

One of the earliest medical training centers was that of the Ludhiana Christian Medical College and Hospital in the northern region of Punjab, founded by Dr. Edith Mary Brown, a British physician. Starting with a three-bed hospital and a student body of four, the five-year medical training program now includes 500 in-patients, an annual enrollment of 50 new medical students, with about equal numbers of men and women, and a professional staff of 204. In its 75 years of existence the medical college has graduated more than 3,500 medical and health personnel, including 1,500 physicians. Financial support comes from the central and state governments and from 23 mission boards and societies throughout the world (253).

General medical training needs more emphasis on handicapping conditions and rehabilitation procedures and services, in order to increase the physician's effectiveness in coping with the health and medical problems of the general public. The pediatrician is in a strategic position to assist in various preventive measures that might reduce the incidence of cases such as polio and TB and injuries resulting from accidents, to diagnose and assess handicapping conditions, and to help parents to understand and meet the needs of their handicapped children (107), but few of them have adequate preparation for a role of this kind.

There is no post-graduate specialization in Maharashtra State for physical medicine and rehabilitation, though the All India Institute of Physical Medicine and Rehabilitation in Bombay does organize short orientation courses for physicians and other

personnel every year (370). These include six months' courses for physicians in the techniques of physical medicine and rehabilitation, courses for medical internes, courses for rehabilitation nurses and social workers, plus a program of visits from medical students from all over India and from other countries. Undergraduate clinical training for social-work students is also given at the AIIPMR, besides practical field courses, lectures, and demonstration courses for graduate social workers (448).

Some figures concerning the ratio of various health personnel in India to the population were given as follows for the years 1956-66 (366):

<i>Personnel</i>	<i>Total Number</i>	<i>Ratio to Population</i>
Doctors	86,000	5,700
Midwives and auxiliary nurse midwives	36,000	13,700
Health visitors	4,200	111,800
Dais*	25,000	27,000

In 1968 the following totals were given for registered health personnel (166):

Medical doctors	97,768
Nurses	51,746
Auxiliaries and midwives	68,979
Health visitors	2,832
Sanitary inspectors	48,000

As another source indicated, steady progress has been made in increasing these numbers. Between 1950 and 1963, the number of physicians per 100,000 of the general population rose from 16.9 to 17.7; of nurses, 4.3 to 8.9; and of midwives, 2.7 to 10.5. However, the rate of increase has been far too slow to meet the pressing health needs of the population, especially a steadily grow-

* Dais are midwives without formal training, who have usually learned their skills from their mothers.

ing population. And since many of the older Indian physicians received just a two-year period of training in programs that have only recently been upgraded, the professional competence of medical personnel is probably quite uneven. There is continuing debate over the question as to whether insistence on a higher level of training for a limited number may deny many people the medical services that might be provided by less completely trained but more numerous personnel (281).

There are only half as many nurses as doctors, with a similar shortage of midwives. Many factors are involved, such as a shortage of training facilities and the limited number of girls with sufficient education to undertake the training. But an additional important cause is the abhorrence which upper-class Hindus feel for bodily contacts, especially the kind involved in nursing and midwifery. Parents are often unwilling to provide their daughters with such specialized education since they want them to marry early, or they may frown on the idea of their daughters' working outside the home, since this is not considered appropriate for girls from higher-class homes, or for married women (281).

Shortages include other paramedical personnel such as occupational therapists and physical therapists. Until the 1950's neither of the professions of occupational therapy and physical therapy was well known, and occupational therapy was confused with simple diversion and purposeless occupation of patients. Before 1950 there had been a few British occupational therapists with their army during the war years, but these did not remain long in the country (335). Occupational therapy was introduced into India in 1950 by Mrs. Kamala Nimbkar, who started the first School for Occupational Therapy at the King Edward Memorial Hospital of the Bombay Municipal Corporation, founded the All India Occupational Therapists' Association in 1952, and started publication of the quarterly journal *Occupational Therapy and Rehabilitation in Asia* in 1960 (later renamed *The Journal of Rehabilitation in Asia*). The All India Occupational Therapists' Association has now become a council member of the World Confederation of Occupational Therapists, and applies this organiza-

tion's standards to the program in the two schools it recognizes, in Bombay and in Nagpur (founded in 1958 at the Medical College and Hospital in Nagpur by the State of Bombay).

Other than the partial training for medical corpsmen of the Indian army by English physiotherapists during World War II, there was no physical therapy training until 1953 when the Physiotherapy Centre formed in the KEM Hospital in 1952 began to take students for training, a program jointly sponsored by WHO, the Government of India, Bombay State, and the Bombay Municipal Corporation. When the first class finished its training, the members, along with a few foreign-trained therapists, formed the Indian Association of Physiotherapists and set down minimum requirements for training to qualify for membership. In 1953 a training program leading to a certificate was started at the Emery Hospital of the Salvation Army at Anand, Bombay State, and the Children's Orthopaedic Hospital in Bombay gave in-service training for the partially trained veterans on its staff. From 1957 on, the Indian Army trained its own physiotherapists at two centers, in Poona and Delhi, with two Indian therapists as instructors who received their training in England. In 1958 Madras State initiated the physiotherapy training of nurses for service in state hospitals and institutions, and that same year a team of Russian physical medicine experts started a program at the Kalawati Saran Children's Hospital in New Delhi, with special emphasis on remedial exercise and electrotherapy. All of these programs were certificate programs except for the diploma program at the KEM Hospital, and were undergraduate. The first post-graduate course was given at the All India Institute of Physical Medicine and Rehabilitation in the KEM Hospital in 1956 (335).

The Government of West Bengal proposes to train both physical and occupational therapists in a School of Physical Medicine which it has established at the Institute of Postgraduate Medical Education and Research in the S.S.K.M. Hospital in Calcutta. In addition there are physical therapists who have been trained by the army, some nurses with such training, and a few blind trainees (335).

Figures for training facilities as of March 1964 were as follows:

Occupational therapy (total of 175 qualified OT's)

- 3 graduate occupational therapy schools
- 2 institutes offering post-graduate courses
- 16 occupational therapy departments in Bombay
- 66 occupational therapy departments outside Bombay

Physical therapy (total of about 200 qualified PT's)

- 5 graduate physiotherapy schools, including one about to start functioning at the time
- 2 institutes offering post-graduate courses
- 20 physiotherapy departments in Bombay
- 70 physiotherapy departments outside Bombay

The United Nations report which provided these data stated that 50 occupational therapists and 50 physical therapists were trained annually in the various programs (448). But as one rehabilitation expert points out, figures given for trainees need to be interpreted in terms of the number qualifying versus the number who actually remain in India. An occupational therapy department in the above listing means that there is an occupational therapist on the staff and that some service is given, varying in amount from one setting to another (187).

Occupational therapy is now available for the orthopedically handicapped child in Bombay in four municipal hospitals, two state hospitals, the central government All India Institute for Physical Medicine and Rehabilitation, and four voluntary institutions including the Mahatma Gandhi Memorial Hospital. This kind of service is also available in a few other settings such as two railway hospitals and institutions for the mentally retarded which include among their patients some children with physical disabilities, providing a total of eleven occupational therapy depart-

ments in the city of Bombay. Outside the city there are three such departments in Nagpur, one in Poona, and another in Aurangabad. These do not include the occupational therapy services available in three homes for crippled children operated by the Directorate of Social Welfare (333).

There are two types of occupational therapy training programs at present, one for two years leading to a diploma, and another for two and one-half years leading to a B.Sc. degree. The schools for this training are as follows (187,196,225):

Bombay: King Edward Memorial (KEM) Medical College and Hospital. Founded 1950. Diploma course.

Nagpur: Medical Center and Hospital. Founded 1958. Sponsored by Maharashtra State, and now also affiliated with Nagpur University. Degree program leading to the Bachelor of Science degree at the university.

Delhi: Jawaharlal Nehru Institute for Physical Medicine and Rehabilitation under Mr. Swarup. Formerly combined with a physical therapy training program. Diploma course.

The two-year program of training in occupational therapy at the Jawaharlal Nehru Institute of Physical Medicine and Rehabilitation in New Delhi enrolled 22 students in 1968 as contrasted with only seven in 1960. Occupational therapy units have now been established in three hospitals in that area, including a mental hospital (161). The post-graduate course at the All India Institute of Physical Medicine and Rehabilitation varies in length but usually lasts for only three months and deals exclusively with the orthopedically handicapped.

Training in physical therapy is offered at the following places:
Bombay: King Edward Memorial Medical College and Hospital. Founded 1953. Two-year diploma course following the prerequisite inter-science college program. Approved by the Association of Physiotherapists in India.

Nagpur: Medical Center and Hospital. Founded 1964. Two-year diploma course.

Delhi: Jawaharlal Nehru Institute of Physical Medicine and Rehabilitation. Two-year diploma course. Recently was separated from the occupational therapy course at the request of the government.

Madras: Madras General Hospital. Founded by Dr. Natarajan in 1960. Two-year diploma course.

Vellore: Christian Medical College and Hospital. Founded 1962. Two-year diploma course. Also a short course for those working with leprosy-affected persons.

Bangalore: Short-term certificate course lasting from one to one and one-half years. Sponsored by Mysore government.

In addition, a blind physical therapist in Gujarat State had operated a two-year physical therapy training program for four or five years, but when the man died the school was eventually dissolved. Blind students receive physical therapy training at the Poona School and Home for the Blind. Other physical therapists are trained at the Kalavati Saran Children's Hospital in New Delhi, and at two Army Schools of Physical Therapy in Delhi and Poona under the direction of the Armed Forces Medical Services (448). A three-month postgraduate course is offered at the All India Institute of Physical Medicine and Rehabilitation, but as in the case of the occupational therapy course it deals here only with the orthopedically handicapped. The Director of this Institute reports that in the ten-year period from 1957 to 1967, the Institute trained 152 physical and occupational therapists, 56 physicians, 91 nurses, 80 social workers, vocational counsellors, and employment officers, and 60 prosthetists and orthotists.

As indicated earlier, the first program for training in physical therapy, as in occupational therapy, appeared in Bombay (333) at the King Edward Memorial Medical College and Hospital, and resulted from the collaboration among the Government of

India, WHO, Bombay State (now the separate states of Maharashtra and Gujarat), and the Bombay Municipality. All the centers providing occupational therapy services also provide physical therapy except the hospitals in Aurangabad and Poona.

In the future it might be desirable to incorporate training programs for occupational and physical therapy students in university curricula. Students in these specialties at the Institute for Physical Medicine and Rehabilitation in New Delhi, for example, have very limited space and library facilities in their present set-up.

The lack of adequately trained physical therapists for leprosy work has led to the development of short-term courses six to nine months in length, although efforts are being made to require them all to last for nine months. These courses are offered in three places, including the Hind Kusht Nivaran Sangh in Vellore (470) and the program at the Gandhi Memorial Leprosy Foundation in Wardha (187). While persons with this experience are much needed, can they appropriately call themselves physiotherapists? This subject was discussed at a recent All India Conference of Leprologists held in Madras, where a resolution was passed calling for consideration of an alternative title for those with limited training, and for the appointment of a committee to discuss their curriculum (470). A term such as "physiotherapy technician" might stress the fact that such a person is not a physiotherapist but just a technician . . ." "a glorified Ward Boy who knows the few basic hand exercises, wax bath, and plastering of feet" in the case of work with leprosy patients (327). Those who have been given a full program of training should be accorded proper status.

At the 4th Pan Pacific Rehabilitation Conference held in Hong Kong in September 1968, the desirability of a training course to qualify personnel for general routine procedures in rehabilitation, which would mean a shorter and more limited type of preparation than that developed in most countries for paramedical workers such as occupational therapists and physical therapists, was debated. It was pointed out that workers with limited qualifications should not be added to a staff unless there are adequately trained

personnel to supervise them, because of the danger that without such supervision patients may in general receive inferior care, and also these poorly trained workers might come to be accepted in place of suitably trained paramedical personnel (323).

When the army organized a program of rehabilitation during World War II for wounded servicemen, they imported about 20 English physiotherapists and gave a short-term $4\frac{1}{2}$ months' theoretical course for so-called uneducated nursing orderlies and put them to work. All the physiotherapists employed by the Children's Orthopaedic Hospital in Bombay when it was started were ex-servicemen who had had five years of army experience and then 12 years' experience (up to the time of reporting in 1965) that qualified them as physiotherapists. They received credentials for their work from visiting WHO specialists (64).

Even fully qualified therapists may not work up to their full capacity because those for whom and with whom they work do not understand how to employ them most effectively. Physical therapists working with leprosy patients, for example, may spend much of their time just making footwear. If the occupational therapist or physical therapist had the services of a general technician who could give specific kinds of treatment, the trained therapist would be released for the special cases needing individual attention. Their services, like those of other specialized rehabilitation personnel, would benefit from the setting up of a fully staffed center for making a number of studies incorporating the experience and knowledge of specialists as advisors or consultants. This specialized experience and knowledge needs to be collected and published so that it can be made available to others (327).

Although no speech therapists are yet available, some work with speech problems has been incorporated into the occupational therapy provided for individual children. A few speech therapists trained abroad have returned to work on a part-time basis at places like the Children's Orthopaedic Hospital and the B.Y.L. Nair Municipal Hospital in Bombay. Speech therapy was added to the services of the All India Institute of Physical Medicine

and Rehabilitation in November 1960 when a person with an M.A. in speech returned from the U.S.A. (333). A great need for training speech therapists is recognized (370), and may gradually be met as a result of the special speech and hearing projects discussed in the section on the deaf. Perhaps the most significant of these is that of the All India Institute of Speech and Hearing in Mysore.

The shortage of professionally trained social workers is illustrated by the fact that in the 1967 Directory of Professional Social Workers in India, which lists only those who have completed a full-time two-year professional social work program, a total of 1,302 is listed for a country of over 520,000,000 people. Problems of distribution exist here as elsewhere; the largest concentration occurs in Maharashtra State, whereas only one social worker is found in each of the States of Manipur, Tripura, and Sikkim (106). But this 1967 directory does represent a significant attempt, the first of its kind in India, to collect and publish information about a category of professional rehabilitation worker, an effort aided by the U.S. government.

The 1967 report on rehabilitation services in Maharashtra State concludes with the statement that this state needs at least one more training school for physiotherapists, another for occupational therapists, a program for training speech therapists, and expansion of the training programs for medical social workers (370).

Among the shortages of trained personnel in the rehabilitation process is that of orthopedic and prosthetic appliance technicians. The total need is difficult to estimate, but if one allowed one technician for every half million people, then about 1,000 fully trained technicians would be needed. And even if only 2% of the total population of India would benefit from some form of appliance, over 10,000,000 appliances would be required (144).

Recently progress has been made in India in the manufacture of prosthetic appliances. There are a few private manufacturers in urban centers; Bombay has half a dozen. The Orthopaedic Factory of the Jerbai Wadia Hospital in Bombay supplies 600

appliances a year. The All India Institute of Physical Medicine and Rehabilitation also set up a Prosthetics Workshop in Bombay in 1959 with the technical aid of UNICEF (448). An artificial Limb Centre was established in the Department of Orthopaedic Surgery at the Government General Hospital in Madras in 1964 (294).

Another major resource is the Artificial Limb Centre, now located in Poona, which was established in 1944 in order to rehabilitate 3,000 ex-servicemen who lost limbs in World War II. This center was patterned after the Ministry of Pensions' Limb Fitting Centre at Roehampton, England. In 1945 the government sent a group of army surgeons, engineers, and technicians to England for a course of training in the manufacture of prostheses, and a team of experts came to India from Roehampton to help start the Indian project. In 1951 the center began to accept civilian patients, estimated to constitute a group seven times as large as that of the veterans. An important part of the Poona program of rehabilitation are the sports activities, as emphasized in the festival of sports and games first organized at the Artificial Limb Centre in 1962, in which 250 disabled persons from all over India participated (74).

Although the Centre turns out at least 3,000 artificial limbs each year, there are usually as many as 2,000 civilian patients still waiting for prostheses. The Centre now has two repair shops attached to the Military Hospitals at Delhi and Lucknow to serve upcountry patients. Also served from time to time are patients referred from other Asian countries. Generally leg prostheses are found easier to fit than those for arms. A research laboratory in the Poona center is experimenting currently with the manufacture of plastic limbs and prosthetic aids, which are proving satisfactory. On the average four to six weeks are needed for fitting the artificial limb and training the patient in its use (74).

Extensive training in the use of artificial limbs is given in the rehabilitation wing by an instructor from the Army School of Physical Training, with an emphasis on physical therapy in this training. A Convalescent Wing opened in 1961 for the civilian

disabled provides room and board and recreation for a nominal fee.

Of 500 physically handicapped persons studied in 1963 (52), 35% did not require any special appliance; cases of amputation, polio, and paraplegia were those that usually needed prosthetic devices. Nearly two-thirds of those who needed appliances were able to secure them, though less than half (44%) paid for these devices themselves. Sheer poverty prevented most of the remaining third from obtaining prostheses, since the average cost of an artificial limb, for example (from 175 to 475 rupees), is far beyond what the average Indian could afford to pay, aside from the additional expenses of hospitalization and room and board and lost wages necessitated by travelling to an urban center to get the needed equipment. About 48% of the 500 cases felt they had not succeeded at all, whatever the treatment used, in limiting or overcoming their disability, and more than a fifth of these (46 out of 242 persons) felt they had not succeeded even with the use of prosthetic devices. Since others who used no prosthetic aids for similar handicaps reported success in overcoming their disability, it is evident that psychological factors enter into the picture. It was also evident in a number of cases that family attitudes were more important in determining the level of adjustment than the severity of the disability.

The study revealed three major problems related to existing prosthetic services:

1. Most amputees cannot afford to buy artificial limbs and appliances because of their prohibitive cost.
2. Some who purchase them are not given proper training in their use, and thus do not find them as helpful as they should be.
3. No effort is usually made by those providing the prosthesis to see that the kind supplied meets the requirements dictated by local climatic and economic conditions which vary considerably.

Some progress has been made recently in correcting these conditions, but much still remains to be done, according to a 1968 report (391). Most of the prosthetic and orthotic appliances provided in India are adapted to the ways of life in western countries. A follow-up survey of 300 patients fitted with braces and prostheses at the All India Institute of Physical Medicine and Rehabilitation in Bombay in the period from 1960 to 1965 revealed that only 46% of these patients were actually using them. Among the reasons cited or implied for not using the appliances were the following: (1) the braces were too uncomfortable and cumbersome; (2) some mothers reported that they had no one to look after the child wearing braces; (3) they did not understand the basic medical reasons for using the prostheses; (4) the child's disability remained the same after using braces. It was evident that most patients did not understand the preventive and supportive functions of the appliances, and were disappointed when an absolute and complete cure of the disability was not effected. One of the main problems for many of them was the fact that since most of their daily activities were performed on the floor, with much stooping and squatting, their movements in the typical Indian home were made more difficult when using braces or artificial limbs than when moving without them on their haunches or in an all-fours position. It is recognized that further research is needed for developing prostheses better adapted to the special circumstances of Indian rural life.

A major influence in modernizing and extending prosthetic and orthotic services has been the two four-month courses held at the Christian Medical College and Hospital, Vellore, in 1963 and at the Government General Hospital in Madras in 1967 under the sponsorship of the U.S. Social and Rehabilitation Service and the World Rehabilitation Fund (276). During the latter course 377 complete prosthetic and orthotic appliances and components were completed by the students, as well as other items to be used by the students in displays and in teaching. Emphasis in these courses, which were directed by Mr. Juan Monros of the World Rehabilitation Fund, was placed on the use of local materials, including plastics, and modern methods such as the patella-tendon-bearing below-knee prosthesis and the total-contact

socket for above-knee amputations. Graduates of these courses are now working in new prosthetic-orthotic shops established with the aid of grants from the U.S. Social and Rehabilitation Service at the Government General Hospital, Madras; the All India Institute of Medical Sciences, New Delhi; the Lions Center for the Physically Handicapped, Mangalore; Wanless Hospital, Miraj; University College of Medicine, Calcutta; Christian Medical College and Hospital, Vellore; Christian Medical College and Hospital, Ludhiana; and St. John's Medical College and St. Martha's Hospital, Bangalore. The first of these projects was that at Vellore which began in 1962; the newest is that at Bangalore which was activated in 1969.

The types of prosthetic and orthotic devices produced at these centers are identical with those produced in the United States and western Europe. Because of lower costs for supplies and lower salaries (trained technicians are paid an average of 250 rupees or \$ 33.00 a month), the costs of completed devices are very low compared with costs in the United States and Europe and also lower than such appliances have been in India in the past using other methods of production. Furthermore the use of more modern techniques than those found in other centers has resulted in much higher production rates. For example, a typical monthly production report in 1969 from the Lions Center for the Physically Handicapped in Mangalore was: two above-knee prostheses, five below-knee prostheses, nine short leg braces, 13 long leg braces, four Knight spinal braces, and a variety of other braces, splints, collars, and prosthetic devices. A significant factor contributing to the success of these projects is a program of follow-up visits to each of them for consultation and further instruction. Former students have noted that amputees in India almost invariably prefer a limb of a lighter shade than their own skin color.

Additional information concerning the vocational and social adjustment of amputees fitted with modern prostheses will become available as a result of a research project which began in 1969 at St. John's Medical College and St. Martha's Hospital in Bangalore, which is being sponsored by the U.S. Social and Rehabilitation Service.

The limited number of appliances provided in India is indicated by an official report from Maharashtra State, one of the most progressive states, whose 1967 report gave the following data, with no indication of the relationship between the small number of prostheses supplied and the total number of persons who needed such appliances (132).

Prostheses and Appliances

<i>Year</i>	<i>No. of beneficiaries</i>
1961-62	0
1962-63	10
1963-64	12
1964-65	19
1965-66	27
1966-67	25
Total ..	93

If government plans can be implemented, the needs for prosthetic and orthotic appliances will gradually be met. The Fourth Five Year Plan has a Rehabilitation Scheme that provides more money than ever before for this purpose. It is proposed that for medical rehabilitation there be established (1) a factory for the manufacture of standard components of prostheses on a mass scale which can be fitted for the individual in the hospital; (2) three to five rehabilitation centers for the rehabilitation of complex cases and for training all categories of rehabilitation personnel; and (3) rehabilitation units in 35 medical colleges in different parts of the country. Unfortunately because of fiscal problems it had been impossible as of 1970 to implement these far-reaching and significant plans.

As a part of the long-range approach to medical rehabilitation needs, increasing emphasis is being placed on medical research, for which the All India Institute of Physical Medicine and Rehabilitation serves as the chief center. The Indian Council of Medical

Research at New Delhi conducts research concerning cardiovascular diseases, the relationship between the pathology of deformity and the factors influencing the development of disability, and new methods of reconstructive surgery. The Society for Rehabilitation of Crippled Children in Bombay has set up a Cerebral Palsy Research Unit with the aid of a grant from what was then called the U.S. Office of Vocational Rehabilitation. The Nagpur Association for the Rehabilitation of Children with Orthopaedic Disabilities is also working on a research project with aid from the U.S. agency (448).

Another important center that combines research with medical treatment and rehabilitation services is the All India Institute of Medical Science, activated in July 1963, where the main types of cases are cerebral palsy, hemiplegia, paraplegia, and polio. There are three groups of patients: (1) those who come regularly; (2) those who can come in every two or three months; and (3) those who can come in only once, who come from a considerable distance. Physical therapy and occupational therapy services are provided, and a psychologist was acquired in 1967. The limited educational services offered at present are to be expanded and a school organized in one wing of the medical center, with a trained teacher in charge. The institute also has a speech and hearing center to which children can be referred. Two technicians from the orthotic-prosthetic center participated in the special training programs taught in Madras.

An important pilot project demonstrating the goals of a total rehabilitation program toward which present efforts are directed is that of the All India Institute for Physical Medicine and Rehabilitation in Bombay (391). Its Director, Dr. M. V. Sant, believes that the program is possibly the only one of its kind in the world in that all aspects of rehabilitation — medical, sociological, philosophical, and economic — are attended to in this one setting. An important part of this program is that after a patient is examined and evaluated, he participates in a case conference in which the entire treatment program is explained to him and he is shown pictures of various stages in rehabilitation as illustrated by patients who have already had operations and are using braces

and crutches. Thus he is given more realistic expectations concerning the end results, for he often expects a complete cure and correction of his condition. He is told to think the matter over for two weeks and then return to undergo treatment if at the end of that time he still believes he wants it. Medical treatment, fitting with braces and prostheses, occupational and physical therapy, instruction in the use of public transportation through actual experience, vocational training, job training, and follow-up are all part of the services provided. From 1961 to 1967, about 700 disabled persons were either placed in new jobs in Bombay industries or returned to their former jobs. Meanwhile a medical social worker visits the patients' homes to analyse the situation to which they will return, and occasionally a physical therapist or occupational therapist will also visit the home to suggest adaptations in home equipment. From 1955 to 1967, the Institute provided rehabilitation services for 10,586 persons, of whom 45.5% were fully rehabilitated, 30.6% were evaluated and advised concerning treatment, 12.3% needed only limited treatment such as corrective surgery and laboratory tests, and 11.1% were referred only for appliances or vocational evaluation. Future plans for India include a network of three types of rehabilitation centers: (1) rehabilitation institutes with complete services including the training of personnel and conducting of research; (2) regional rehabilitation centers in the principal cities of regions or states, to rehabilitate those with moderate disabilities; and (3) rehabilitation units attached to medical college hospitals, for serving relatively mild cases of disability.

At the tenth anniversary celebration of the All India Institute of Physical Medicine and Rehabilitation in Bombay in 1968, Dr. Sant stated that the Institute had up to that time trained in rehabilitation techniques a total of 152 physiotherapists and occupational therapists, 56 doctors, 91 nurses, and 80 social workers, vocational counsellors, and employment officers. During the ten-year period the Institute had also obtained employment for 594 disabled patients, and in the single year of 1966-67 had treated 1,430 disabled patients (315).

Progress in the provision of rehabilitation services has also been stimulated by a number of professional meetings such as

Seminars sponsored by the All India Institute of Physical Medicine and Rehabilitation in Bombay, including a 1959 conference on vocational rehabilitation for social workers and vocational counselors, and on social and vocational rehabilitation of the physically handicapped (448). The first All-Asia Congress of Pediatrics was held in January 1961 in New Delhi.

Other medical meetings related to the handicapped have been the National Congress of Occupational Health in Calcutta and Durgapur in February 1967, sponsored by the Society for the Study of Industrial Medicine, India, and the First Congress of the South East Asia and Pacific Area League against Rheumatism, held in Bombay in February 1968. Various types of handicapping conditions have received special attention at the meetings of the All India Occupational Therapists' Association; for example, the theme of a Seminar sponsored by this organization in Bombay in January 1968 was the rehabilitation of the cardiac patient (15).

One expert has summarized the problems faced in rehabilitation efforts in India as follows (331):

1. *Negative attitudes* of the patient, his family, and the community in which he lives. Since there is a widespread fatalistic belief that a disability represents divine punishment for sin, the patient often resists rehabilitation procedures, or his family will use this belief as an excuse for not troubling to take him to the hospital or center. (Or he may wait with resignation until death releases him through the process of reincarnation into a new life without a handicap.) However, unwarranted importance may be attached to the alleged attitude of fatalism. When it is demonstrated that something can be done for the patient, the fatalism becomes less evident, and some family member will cooperate even if the older or more orthodox members of the family do not. Community attitudes stem from ignorance of what rehabilitation measures are possible for the patient and from other factors such as: a negative approach that notes disabilities rather than abilities, awareness of general unemployment, and realization of the lack of skills on the part of the disabled.

2. *Lack of facilities.* The size of India and its population, and the fact that independence was achieved only a little over 20

years ago, explain in part the fact that physical facilities such as space and equipment are lacking even for simple types of rehabilitation procedures in hospitals or institutions for the ill and injured. The problem may at times be aggravated by a false pride in demanding imposing structures and equipment instead of being content to start with more modest provisions. Limited space and personnel mean that the pressure to admit patients is such that a patient cannot be kept long enough to undergo full rehabilitation procedures. Also the doctor has a heavy patient load. In addition, there may be lack of knowledge as to what facilities and services are available, on the part of doctors, paramedical workers, social workers, family, and community. Thus they may write letters to government officials a thousand miles away demanding some service which they may know nothing about, when right in the same town or city some related assistance is available.

3. Lack of informed thinking in planning services. The concept of the Welfare State led early planners to envisage doing everything for everyone. They were not interested in voluntary effort, and there was even talk that bodies like the All India Women's Conference were or would be no longer needed. Then the reality of the vast problems began to become evident, and it was gradually realized that not only were voluntary efforts necessary but they should also be encouraged, since a partnership of government and voluntary agencies was absolutely essential. Now have arisen the problems of deciding who does what, and how efforts can be adequately standardized and supervised.

To solve such problems India needs the following:

1. Development of both cheaper and simpler types of construction and a willingness to make adaptations from western patterns that are suitable for India.
2. Training of medical and paramedical specialists at a rate which enables them to be absorbed into concomitantly developing rehabilitation services.
3. Development of some means for disseminating knowledge concerning what rehabilitation services can do for a patient, thus assuring greater demand for them.

4. Increase in partnership among central and state government agencies, voluntary agencies, and the enlightened public as represented by industrialists and service groups like the Rotary Club and Lions Club.

Many other rehabilitation experts have also outlined suggestions for future programs in the field of rehabilitation of the handicapped, and noted the limitations and needs of existing provisions (162).

Chapter 5

THE TRAINING AND EMPLOYMENT SERVICES

Helping the handicapped to obtain a job and become self-supporting or partially self-supporting is the logical final step in the process of total rehabilitation.

One of the most conspicuous developments in the field of social welfare after the end of the last world war is the growing recognition of rights and responsibilities of the handicapped (370).

The concept that the handicapped are practically a separate species is being replaced by the awareness that if given the opportunity they can usually develop their residual capacities to the point of assuming their responsibilities as citizens and leading a full and independent life. Indians increasingly recognize that the community owes the handicapped this opportunity, and that the process of rehabilitation is not completed until they obtain a job and become at least partially self-supporting. Job placement involves many factors: the handicapped individual must have the skill and physical abilities necessary for handling a particular job; he must be able to meet the standards of work performance set up for that job; he must not be a safety hazard to himself or to his co-workers; and the job must not fatigue him unduly or enhance his disability.

It is increasingly understood that no one should be expected to employ handicapped persons who are untrained, incompetent, emotionally unstable, or unable to maintain themselves in a work

environment. This means there must be an adequate assessment of residual abilities and the matching of specific jobs to specific individuals, as well as adequate training.

In India a widespread negative cultural attitude toward work, especially work with one's hands, has affected the development of vocational training and opportunities for the handicapped as well as for the non-handicapped. It is reported that in South Asia as a whole, this prejudice is strongest in those countries where popular education is least advanced and where literacy is lowest. The British preference for administrators with a broad general educational background rather than more specific technical training further reinforced "the inherited cultural pretensions and prejudice against manual labor of the indigenous upper strata in the colonies, who made use of the education available" (281). Persisting shortages of personnel such as trained nurses, midwives, and physical therapists can be explained in part on this basis.

The prejudice against manual work also explains to some extent the difficulty faced in achieving a more functional orientation in education, and development of specifically vocational and technical education and training. Gandhi made strenuous efforts to give education a vocational slant, although some educators feel that his emphasis on local crafts and skills in "basic education" and on the simple, natural wisdom of the average villager represented a kind of subtle denigration of more sophisticated and advanced education. Actually his "basic education" was not widely successful, and was often distorted in actual practice. There still persists "the old colonial pattern of building up a highly educated elite with an attached lower rank of technical personnel functioning as subalterns." (281).

The emphasis on the study of languages has tended to reinforce the continuation of traditional academic education at the expense of functional innovations such as vocational education. This has perpetuated the distinction between education for cultural purposes as the prerogative of the upper classes and training for a specific trade or manual occupation as the "fate" of the lower classes (281). The fees charged for academic secondary educa-

tion support the colonial tradition of providing such education only for the upper classes. India's Fourth Five Year Plan re-emphasized the need for expanding facilities for terminal vocational education, but in actual practice the larger percentage of the increasing secondary enrollment continues to attend general rather than vocational schools. In South Asia the poorest countries, including India, continue to provide far more general academic secondary schools than vocational and technical programs, with less than 2% of the secondary age group in the latter kind of training. Agriculture is still a neglected study in Asian countries like India even though it continues to be the chief economic activity in these countries.

There is furthermore a shortage of trained vocational teachers. Properly trained vocational instructors frequently take jobs in industry where salaries and social status are higher. Without suitable equipment and machinery, vocational programs degenerate into educational offerings of dubious quality. Recruiting of both teachers and students is hampered by the popular prejudice against engaging in or preparing to engage in manual work. The custom of calling general secondary education "higher" and vocational education "lower" is not helpful. An increase in the number of educated unemployed persons may therefore occur in a community with severe shortages of trained vocational personnel (281).

In spite of the increasing numbers of women workers, men will continue to dominate the employment picture. In the 1961 Indian census of 439,000,000 persons, slightly over half (51%) were males. At that time, of a total working population of 188,000,000, over two-thirds, or 69%, were males. The 59,000,000 women workers (31% of the labor force) were sub-divided as follows; cultivators, 56%; agricultural laborers, 24%; mining, 2%; household industry, 8%; and the remaining 10% in manufacturing, construction, trade and commerce, transport, and other services. In 1961, 45.3% of the women in the age group 15 to 59 were in the labor force, versus 92.6% of the males. A relatively greater increase of males in the labor force is expected for the future as compared with women, so that by 1976 it is

estimated that 69% of the labor force will be composed of men. Proportions of men and women in the labor force do vary from state to state, however. Changes in the employment picture for women, then, will occur not so much in total numbers as in the distribution of women in various kinds of employment as they enter a greater variety of occupations. A proportionately greater increase is occurring for women than for men who are registering with the employment exchanges: from March 1961 to February 1967 the number of registered women increased from 120,000 to 260,000, while the number of men rose from 1,562,000 to 2,574,000. The average educational level of women registrants was higher than that of men. The principal occupation in which women with training or experience were seeking employment was teaching. Pilot studies in Delhi and Bombay showed that most women wanted full-time employment even those currently in part-time employment (191).

Another report pointed out that the percentage of working women is about the same as in more highly developed countries (356). In the decade 1951-1961 there was a drop in the percentage of women in service occupations and a rise in both agricultural and industrial jobs. The more rapid rise of the number of employed women in agricultural work is considered a backward trend. Between 1961 and 1968 the number of women seeking jobs increased more rapidly than for men, and proportionately more educated women than educated men sought work (50.5% versus 39.1%).

Difficulties in placing women include:

1. Lack of appropriate education and training.
2. Lack of mobility.
3. Reluctance to move to rural areas, because of lack of housing or other facilities.
4. Job preferences such as reluctance to take jobs involving contacts with the public, such as nurses, midwives, and health visitors.
5. Parental disapproval of jobs necessitating contact with men or movement to other areas.

6. Limited employment opportunities for women as compared with men in places like offices except in unskilled categories as in factories and small-scale industries.
7. Gradual mechanization of certain industries which have traditionally employed women.
8. Reluctance of some employers (a) to select married women who might have to be paid more because of such factors as maternity leave, (b) to give equal pay to men and women, and (c) to give special training to women when they might marry and give up their jobs (191).

The professions of nurses, sales girls, and secretaries are still taboo careers for middle-class Indian women. Medicine requires too long a period of training, and its practice may interfere with marriage and family goals. Engineering is regarded as a man's profession. Parents have conflicting attitudes toward their daughter's having a career, for while her marriage prospects and personality development might be enhanced, she might become too independent. Women continue to face other practical problems such as the lack of day nurseries for the care of children, the lack of refresher courses for those who wish to resume professional life after their children are grown, and traditional prejudiced ideas that middle-aged women are because of their age less capable of working (293).

Inadequate education (for handicapped as well as non-handicapped youngsters) both results from and is in part responsible for the prevalence of child labor in India. About 41% of the population are children under 14 years of age. According to the 1961 census, there were 180,000,000 children in this age group. Of these, 8,700,000 boys and 5,800,000 girls were employed, or 8% of the age group. The percentage of child laborers was highest in Rajasthan, Andhra Pradesh, and Mysore in that order, and lowest in Kerala and West Bengal. About 30% of the 10-to-14 were employed, again with more boys than girls working. In general, the less industrialized the area, the greater the extent of child labor. Thus participation rate is higher in rural than in urban areas: 9.16% in rural areas and 2.59% in

urban areas. Children aged six and under work almost exclusively in rural areas (193).

Agriculture provides most of the work opportunities in rural areas. According to the First and Second Agricultural Enquiries, employment for children under 15 increased from 4.9% of the agricultural labor force in 1950-51 to 7.7% in 1956-57, at which time 3,000,000 children were engaged in agriculture, most of them seven to 12 years of age.

Rural children are given tasks suitable for their age such as gathering fuel and other things from the forest, selling vegetables, tending crops, and tending cattle. Of those earning wages outside the family, girls pull weeds, and transplant and pick cotton, pepper, and chillies. Boys do almost every kind of agricultural work including at times the hard work of plowing.

Plantations provide a variety of paid work for children such as pulling weeds, pruning bushes, removing harmful insects, picking and sorting tea leaves, picking coffee berries, moving plants, and rubber tapping. Children are often hired along with their parents and live on the plantations. Although under the Plantation Labour Act, 1951, employment of children under the age of 12 has been prohibited, many children are still employed on tea and coffee plantations, chiefly in harvesting periods. According to the Labour Investigation Committee (1946) children under 15 years of age comprised 25.7% of the total number of workers employed in Dooars, West Bengal, 21% in Darjeeling, 14.5% in Assam, 16% in Surma Valley, 11% in South India, and 4.1% in Rubber Estates.

Many children are employed in small-scale village and cottage industries and crafts which in general are not covered by the legislative provisions concerning minimum working age, hours of work, etc., and thus their working conditions are usually very poor. They work long hours under very unsanitary conditions without even adequate drinking water facilities, in poorly ventilated and overcrowded locations in dirty streets and lanes.

It is in these unregulated industries that the worst evils of child labor and child exploitation are prevalent; even

children between the ages of 5 to 12 are employed in these industries. Many children are not even registered in the books of the workshops (193).

Child labor is commonly found in the manufacture of mica and in the glass bangles industry; in the latter about 35% of the workers are children. Many children help in the weaving at home, working in the middle of the carpet loom while adults work at either end.

Among the chief small-scale and cottage industries in which children are employed are: handloom-weaving, leather-tanning, carpet-making, tailoring, and pottery-making. Variations occur from state to state depending on the marketing picture in each area.

There is less child labor in organized industries, which are generally subject to restrictive legislative regulations. However, such regulations are often openly or tacitly ignored by employers and children alike. One way is to employ children in a business hiring a smaller number of workers than the minimum to which the regulations apply. Another way is to falsify the age of the child. The labor law enforcement staff is too small to check on and detect many violations. The percentage of child workers in these industries is declining — from 75,000 child workers in 1923 to 2,566 in 1962. Similarly the number of adolescents employed in factories has declined from 23,000 in 1951 to 9,500 in 1962.

In factory employment boys constitute four-fifths of the total and girls one-fifth; there is a far greater disparity in employment according to sex in organized industry than in agricultural work and cottage industries. Social customs account for this, chiefly parental unwillingness to send girls of marriageable age to work in a factory. The main industries in which child and adolescent labor are found (aside from tea, textiles, and mica) are: wood and cork; furniture and fixtures; printing, publishing, and allied trades; leather and leather products; rubber and rubber products; metal products and machinery; transportation equipment; and services such as laundry, dyeing, and cleaning. Children are usually given light work such as packing and labelling.

Many children are also employed in municipalities, public works, and river valley projects, as well as in minor street occupations such as selling newspapers, peanuts, candy, and biscuits, or shining shoes.

Child labor continues because of the low level of adult earnings, which requires children to contribute to the family income. Child labor may be essential to survival, and children therefore lie about their ages and accept low wages. Some employers find it profitable to employ children because they generally pay children only 50% or 60% of what adults would receive.

The continued use of child labor is also partly attributable to inadequate provision for education — lack of an accessible school, lack of good teachers, overcrowded classes, poor school buildings, and lack of classroom materials. About 30% of the primary schools and 50% of the secondary schools are housed in unsatisfactory quarters. In 77% of the schools there are no satisfactory arrangements for drinking water; 90% have no toilet facilities; and 38% have poor sanitary conditions. Other limitations are unrealistic academic courses, the requirement of learning several languages, and poor health and malnutrition resulting from undesirable living conditions at home (193).

With general unemployment, underemployment, and even competition with child labor, the problem of finding jobs is still greater for the handicapped than for the able-bodied. The Kanpur survey showed that a few of the blind and of the deaf had received some kind of vocational training in an institution for their particular kind of disability, but there was no opportunity of this kind for those with orthopedic handicaps. Only 8.7% of the total group were employed, and 13.2% self-employed in some occupation (390). In the Delhi survey, more than half (57%) of the 221 handicapped persons studied were illiterate, and a third of them were working and making some contribution to family income, usually in clerical work or small trades. This is a larger proportion than in the Kanpur study, but it still indicates that two-third needed employment (264).

The percentage of employed among the total number of handicapped persons in India is small because:

1. There are few institutions to educate and train them.
2. The training may not prepare them for available jobs.
3. Employment of the handicapped is not required by law.
4. Employers in open industry are concerned about a possible lack of acceptance by fellow employees, accident proneness, and resultant compensation costs.
5. There are no organized programs to provide part-time or full-time work at home.
6. Vocational guidance and social adjustment programs are inadequate.

Unemployment among the handicapped is related to education that is either insufficient or inadequate. Prevocational training as part of the regular school program would reduce the number of "dropouts" (either handicapped or able-bodied). Preparation to become blacksmiths, carpenters, masons, and agricultural workers would lead to salable skills and jobs that would make a contribution to the economy as well as benefit the individual (76).

Industrial and business organizations such as the Mysore Electrical Industries, the Indian Telephone Industry, and Bharat Electronics are increasingly interested in employment of the handicapped. Private ventures in training and employment for the handicapped provide examples of this trend. A club was organized by some physically handicapped persons and their friends in the state of Madras in 1959, and was registered as the Association of the Physically Handicapped with the primary aim of rehabilitating the orthopedically handicapped. The next year a training center was begun in a private garage in a suburb of Bangalore, where six trainees were given instruction in embroidery, tailoring, and bookbinding. Since this training did not lead to employment, a small industrial unit for both men and women was started in the garage in 1961 with the cooperation of the Mysore Electrical Industries. Growing public interest led to the donation of land for a new building and eventually funds for its construction, with the result that 18 trainees could now be

accommodated. When in 1965 the Indian Telephone Industries provided work opportunities, a second unit was established. In 1966, when the trainees totaled 42, a third unit was organized with the aid of the Bharat Electronics Limited. The training program lasts two years with pay related to increasing mastery of skills. Free lunches and milk are now provided with the help of donations from the National Christian Council, and free classes are conducted by a group of social workers (179).

Special employment offices have been established to assist the handicapped in finding jobs. The first Special Employment Office for the Physically Handicapped was founded in Bombay in March 1959 under the state Directorate of Employment, to assist the blind, deaf, and orthopedically handicapped. To obtain such assistance, registrants must meet certain requirements: (1) they must be recommended by a recognized educational or training institute for the handicapped; or (2) they must have had work experience while residing in the Bombay area; or (3) they must have had at least secondary-level education, while residing in Greater Bombay (370). There are now nine such special employment exchanges, in Bombay, Delhi, Hyderabad, Madras, Calcutta, Ahmedabad, Bangalore, Ludhiana, and Kanpur (99). Attached to each office is a medical board including an ophthalmologist, an ear-nose-throat specialist, an orthopedic surgeon, and a general practitioner who examines the registrants. Registrants approved for work by the medical board of the special office need not be re-examined by employers (332). The All India Institute of Physical Medicine and Rehabilitation in Bombay assists the Special Employment Office in that city by assessing those registered with the office and providing them with prostheses when necessary.

Up to December 31, 1965, a total of 2,789 handicapped persons, most of them orthopedically handicapped, had been placed in open employment by the nine special employment exchanges (162). The special offices also collaborate with various voluntary groups, and this has resulted in a rapid rise in the numbers registered and placed. The total number of handicapped persons registered in these exchanges up to 1967 was 10,286, of whom 1,733 were blind, 1,318 deaf, and 7,235 orthopedically handicapped. Of these,

employment had been secured through the employment exchanges for 3,671 persons — 464 blind, 554 deaf, and 2,653 orthopedically handicapped.

	<i>Registered</i>	<i>Employed</i>
Blind	1,733	464
Deaf	1,318	554
Orthopedically handicapped	7,235	2,653
	<hr/>	<hr/>
Total	10,286	3,671

The experience of the special employment office in Bombay has been that employers are concerned about the risks of accidents with handicapped employees; jobs have to be analyzed with reference to the capacities of the employee in order to dispel the employer's fears, as illustrated by the case of a crippled die-maker in a Poona factory (220). Nevertheless, work placements made by the Bombay office have generally been successful, and the production of physically handicapped workers has compared favorably with that of non-handicapped employees :

- 7% above average
- 82% average
- 11% below average

This record may improve with better methods of follow-up and assistance for those placed (220).

Government provisions for employment of the physically handicapped have followed this sequence:

- 1950: Training Centre for the Adult Blind at Dehra Dun (now provides for 150 blind men and 35 blind women).
- 1954: A small Employment Office of the Training Centre for the Adult Blind, in Madras.
- 1956: Seminar on the Employment of the Blind. The far-reaching conclusions applied to other handicapped groups as well.
- 1958: Plan for Special Employment Offices for the Physically Handicapped drawn up in consultation with an ILO expert.

- 1959: First Special Employment Office established in Bombay (157 placed up to September 1961).
- 1961: Second Special Employment Office established in Delhi.
- 1962: Third Special Employment Office established in Madras (146 placed up to September 1961).

Changes in employer attitudes, from negative to positive, toward hiring a handicapped person may be accelerated by employer awards to be given in celebrating the March 1970 World Day of the Disabled. The central government through its Department of Social Welfare, and with the cooperation of the state Directors of Social Welfare, is planning the first of what is to become an annual event for celebrating the World Day of the Disabled — the bestowal of All-India National Awards for Outstanding Employers of the Physically Handicapped, and also for the most efficient blind, deaf, or orthopedically handicapped employees.

The earliest rehabilitation efforts for the handicapped sponsored by the central government were those undertaken on behalf of war-associated injuries, primarily for ex-servicemen. Many of these services were later expanded to include civilians, and as the number of veterans diminishes through death the programs can be expected to become entirely civilian-oriented. The Directorate General of Resettlement of the Ministry of Defense co-ordinates measures for the rehabilitation of veterans, both able-bodied and handicapped, in consultation with the Department of Social Welfare. The Directorate General of Employment and Training, Ministry of Labour, as well as other Central Ministries and state governments have taken action to rehabilitate persons with war-incurred injuries, particularly those sustained during the Chinese and Pakistani hostilities. Vocational guidance officers visit military hospitals from time to time to advise the potentially disabled. The Department of Social Welfare of the Government of India operates a Training Centre for the Adult Blind at Dehra Dun, and a Training Centre for the Adult Deaf at Hyderabad. The Queen Mary's Technical School, Kirkee (Poona), is exclusively for orthopedically handicapped ex-servicemen, and provides training in light engineering for a period varying from

eight to 18 months; attached to this is a sheltered workshop for those unable to follow open employment (95). The Artificial Limb Centre at Poona, originally established in 1944 for ex-service-men, now includes civilians, and gives vocational training for occupations such as that of farmers, school teachers, tailors, carpenters, milk vendors, and clerks (74). Disabled ex-service-men may be admitted to the Industrial Training Institutes located in various states. A number of voluntary agencies also provide services for these persons, such as the sheltered workshop of the Fellowship of the Physically Handicapped in Bombay and the Jawaharlal Institute of Physical Medicine and Rehabilitation in New Delhi (95).

The rehabilitation services for veterans aim to provide direct civilian employment commensurate with the individual's present qualifications, or through vocational training to enable the individual to obtain such employment. Placement service is provided through the Directorate General of Employment and Training in the Ministry of Labour, Employment, and Rehabilitation. The vocational training is available at the Industrial Training Institutes of the various states, in addition to Queen Mary's Technical School at Poona and at other more specialized centers such as the government centers for the adult blind and the adult deaf. The Queen Mary's School is the only one specifically designated for service personnel. Opportunities for civil employment are facilitated by the governmental relaxations of requirements for various jobs in terms of age and education, and priority in consideration for such jobs. The major problems encountered in vocational rehabilitation are: (1) the limited number of civilian jobs available; (2) the need to obtain work as near their home base as possible, in view of their disabilities; (3) the individual's unwillingness to accept a particular job; (4) employer reluctance in hiring them; (5) the limited number of jobs suitable in view of their lack of the educational or training qualifications for particular kinds of work; and (6) lack of vocational training facilities suited to them, especially when their previous education is limited, or when they have multiple handicaps (49).

Efforts are being made to expand opportunities for the handicapped in government employment, in part as an example to

other potential employers of the handicapped in fields other than trades and unskilled work. A May 1958 questionnaire sent by the Ministry of Education to state governments concerning the number of disabled persons in government employment revealed a total of 723, of whom 444 were employed on railways. Included were nine blind persons at the Dehra Dun center and ten physically handicapped employees at the Artificial Limb Center at Poona.

The Union Ministry of Home Affairs has also asked all the central employment departments to give special consideration to the applications of handicapped persons for employment. Regular employment offices are urged to make special efforts to place handicapped persons. Registration of a physically handicapped person with any employment office is usually for a period of six months; before the end of that period the office is to send him a letter reminding him of the expiration date and informing him that action must be taken if he wishes to remain on the registry. The regular office is also advised to have a special person to deal with handicapped registrants, and to send a special letter to employers to whom a handicapped registrant is being recommended. Follow-up is also specified. The Government of India hopes eventually to establish at least one special employment office in each state, and to encourage voluntary groups to establish workshops for the handicapped. There are plans for providing training in general technical trades for the blind and deaf in a few institutions, but orthopedically handicapped students are expected to go to ordinary training institutions. The scholarships awarded every year by the Department of Social Welfare of the Government of India to blind, deaf, and orthopedically handicapped students can be used either for higher education or for technical and professional training (95). A pilot study is proposed for identifying jobs for the physically handicapped in certain industries.

The Government of India held the First National Seminar on the Training and Employment of the Physically Handicapped in Bangalore Dec. 16-22, 1961. At this conference the 89 delegates included representatives of the central and state governments, voluntary organizations, employers' groups, a labor union, and an international organization (129,130,131). Six special subjects were discussed: the training of the blind, training of the deaf,

training of the orthopedically handicapped, employment of the physically handicapped, the teaching profession, and the administration of services for the physically handicapped. A broad range of recommendations resulted concerning what could and should be done to provide adequate opportunities for training and employment:

Methods of occupational analysis to determine those occupations suitable for the handicapped

Steps to be taken in determining those occupations which are not overcrowded

Machinery to be set up to maintain liaison between training and employment establishments

Integration of vocational counselling and guidance into the training program and placement services

Provisions for retraining when a change of job is necessary

Type and duration of follow-up services

Qualifications of Special Employment Officers for the physically handicapped

Training for these special officers

Criteria for determining which persons are suitable for open employment, sheltered employment, or homework

Subsidies for sheltered employment

Pilot homework schemes

Machinery for securing rural employment

Industrial employment units which could be set up by state governments for the handicapped

Separate provisions for the blind and deaf

Possible range of state employment

Means for undertaking a public education campaign

Provision of residential accommodation for handicapped persons employed in urban areas

Need for accurate statistical survey based on international definitions of categories of the handicapped

Enactment of suitable legislation assisting the handicapped

Since that initial conference several other meetings have been devoted to the question of vocational rehabilitation, such as the July 1961 symposium held at the University of Bombay by the Fellowship for the Physically Handicapped on the topic of rehabilitation, its benefits and possibilities from bed to job. More recently the Indian Conference of Social Work, in collaboration with the Indian Society for the Rehabilitation of the Handicapped, conducted a Seminar on Vocational Rehabilitation and the Use of Normal Facilities for the Handicapped, at Poona April 23-24, 1966. Like the Bangalore conference, this Seminar pointed out many existing deficiencies in current provisions for vocational rehabilitation, and made a number of recommendations for alleviating the problems faced. It was pointed out that not only was there a lack of adequate medical and vocational rehabilitation facilities in India, but there was no concerted and purposeful effort to coordinate even the limited facilities provided by central and state governments on the one hand and by voluntary societies on the other hand, with the object of rehabilitating and finding employment for the handicapped. There was often wasteful duplication of effort in the same city or town, and waste of energy in needless rivalries. For this reason it was urged that Coordination Boards for the Rehabilitation of the Handicapped be organized. The rehabilitation program proposed in the Fourth Five Year Plan had provided more money than ever before but still a limited amount in view of the needs. The Plan proposed: (1) a factory for the manufacture of standard components of prosthetic appliances on a mass scale, for fitting the individual while still in the hospital; (2) two to five rehabilitation centers for working with complicated cases and for training the necessary rehabilitation personnel; and (3) rehabilitation units in 35 medical colleges in different parts of the country. To fit this plan, there has been development and expansion of services at the All India Institute of Physical Medicine and Rehabilitation, Bombay, the Central Institute of Orthopaedics, Delhi, and the Institute of Speech and Hearing at Mysore (308).

Partial implementation of the Plan was indicated in March 1968, when the central government announced the establishment of two pilot Vocational Rehabilitation Centres for the Physically

Handicapped in Bombay and Hyderabad, with initial assistance being given to the deaf and orthopedically handicapped, and other categories of handicap, such as the blind, to be added later. These projects are aided by the Social and Rehabilitation Service of the U.S. Department of Health, Education, and Welfare. The centers will admit for evaluation and adjustment services those adults ready for employment or training, who will be given information about community facilities and referred to appropriate agencies. The period of vocational, medical, and psychological assessment will last up to 50 days, after which arrangements will be made for appropriate training, with placement in open industry and follow-up provided through the Special Employment Exchanges in Bombay and Hyderabad. The centers will work in close liaison with local industries, stimulate the development of rehabilitation programs, and publicize the need for such programs (310, 315).

There will always be need for some sheltered workshops for those unable to perform in regular work situations. In addition to the workshops for the adult blind and deaf maintained by the central government, state governments are gradually expanding their own provisions of this kind. A leader in this kind of development is Maharashtra State, which in 1967 had the following (132):

Number of Sheltered Workshops for Handicapped Adults

<i>Year</i>	<i>Blind</i>	<i>Deaf</i>	<i>Orth. Hand.</i>	<i>Ment. Hand.</i>	<i>Total</i>
1961-62	5	2	2	0	9
1965-66	6	2	3	0	11

An international survey conducted by the World Commission for Vocational Rehabilitation of the International Society for Rehabilitation of the Disabled indicated that in India in late spring of 1964, there was a total of nine sheltered workshops providing for between 220 and 270 handicapped persons, of whom 92% were persons with amputations or other limb handicaps, 1% paraplegic, and 7% blind. These sheltered workers all had the same schedules as those in open industry, working 5½ to 6 days per week. Although in some countries contracts have both

a time and quantity specification, in India "contracts are let on a job basis and end whenever the workshop can deliver the specified number of objects" (143). No disability pensions are provided.

An example of a training-cum-production center is the Workshop of the Fellowship of the Physically Handicapped in Bombay where about 100 orthopedically handicapped persons are employed in occupations such as carpentry, printing, bookbinding, paper and cardboard work, and miscellaneous tasks such as bunching safety pins. After a period of working at a daily rate, the workers progress to piece-work rates, and they may be moved from one section to another to further develop their skills. Supplementary services include a canteen, movie programs, a library, recreational activities, and classes in Hindi and other subjects. Such a workshop is not literally a sheltered workshop in the sense of providing subsidized terminal employment under special conditions, for its purpose is to serve as a transitional stage leading eventually to employment in the open labor market, in cooperation with a local employment office or voluntary organizations (329).

A similar workshop is operated in conjunction with the Lady Dhunjibai Beggars Home run by the Salvation Army with assistance from the Directorate of Social Welfare for the state of Maharashtra. This home is for male orthopedically handicapped beggars only. Those who enter the workshop are given room and board at a modest cost, and perform work on a contract basis, such as assembling plastic flowers, preparing marble mosaic tiles, printing, assembling water heaters, and painting wooden toys after sanding. No placement service is provided, and the men must obtain their own jobs after training. The workshop operated at Ahmedabad by the Cripples' Association, Apang Manav Mandal, is similar.

Up to the present, programs of work for the homebound have been selected and unorganized. A crippled woman might do some knitting, crocheting, or other needlework and sell her products to friends or to a local shop. Occasionally the crippled member of a family which is practicing a trade such as basket-making may assist in the craftwork (329).

Considerable information and experience concerning the vocational rehabilitation of the handicapped has been accumulated in experimental programs for beggars, many of whom are found to have handicapping conditions. The earliest law relating to begging in modern India was the European Vagrancy Act of 1874 (146). (Perhaps the government at that time was more ashamed of the European beggars than the Indian ones.) Increasing concern developed as the seriousness of the problem became evident; for example, the police in Bombay some years ago unearthed a syndicate employing 200 children for the purposes of begging, some of these children having been deliberately maimed (317). In the first decade of the 20th century many local acts were passed which prohibited begging. The Bombay Beggars Act of 1945 went further and was not only aimed at the prevention of begging but also at the custody, trial, and rehabilitation of beggars (except for those begging in or about a place of worship). Commitment to Beggars Homes was made for from one to three years for a first offense and three to seven for subsequent ones. The Act prescribed a separate procedure for dealing with children and with persons suffering from leprosy or lunacy. No provision was made for probation, casework, after-care, and follow-up (146).

It is recognized that there is still a long way to go in enforcing existing laws. For example, in Calcutta 33,000 beggars still swarm the streets each day. These include not only homeless and disabled persons but also cases of older persons who are sent out to beg by their relatives in order to pay their way, and children who are specifically taught to beg. If each person earned just one rupee a day, the total would represent an impressive sum spent for charity. The West Bengal government has now established eight homes for beggars under the Controller of Vagrancy, to teach inmates useful trades, but only 2,000 can be accommodated in these programs, and even with similar projects by voluntary agencies, only a very small proportion of the total number of beggars can be provided for in this way. If the traditional practice of giving alms were abandoned and if the amounts given daily to beggars were pooled, one beggars' home could be established every day (317).

The Bombay Beggars Act of 1947 was enacted to prevent disadvantaged persons from becoming beggars and to rehabilitate those who were already beggars. New techniques were introduced such as classification, casework, institutional treatment, and placement. Thus the Worli Clearing House became a classification center called the Worli Receiving Centre for Beggars. Probation officers now investigate the social background of the beggars, a new program of work camps and preventive workshops has been undertaken, and it is planned to add after-care and follow-up services. The need for these provisions arises from the fact that India is still in that stage of social history through which many other countries have passed, when begging was a recognized institution. Now begging is increasingly recognized as a manifestation of marginal delinquency, to be treated by a two-pronged approach: (1) the attitude of the community toward indiscriminate charity must be changed; and (2) beggars must be given good work habits and helped in the process of becoming assimilated into society (374). The Beggars' Act Advisory Committee formed in Bombay in 1959 has done much to educate the general public concerning the problem of begging and possible solutions (134).

An example of provisions for women beggars, many of whom are handicapped, is that of the State Aftercare Home in Dahoda near Ahmedabad, which houses 83 women and three children. One study showed that 60% of them were seriously disturbed emotionally. Those who are physically able are taught tailoring, knitting, embroidery, broom-making, weaving, and vegetable gardening. In 1968 a psychiatric center operated by the state Social Welfare Department treated ten of the women. In that year 37 women were rehabilitated, and six restored to their families. Altogether 24 were released and six transferred to other institutions. Of the five beggar homes in the state of Gujarat, this is the only one exclusively for women (430).

A Bombay report has indicated that institutions for beggars should be classified into (1) classification centers; (2) terminal homes serving as shelters for incurably helpless lifelong cases; (3) detention homes for rehabilitation of rehabilitable cases;

(4) work camps; and (5) after-care homes. The number of institutions of these various kinds in the state of Maharashtra increased between 1946 and 1962 from 12 to 27, and the number provided for, from 1,200 to over 5,000, along with increasing voluntary provisions. The number of women driven to beggary has been found to be relatively low as compared with men.

Out of a total of 19,222 beggars arrested in Bombay, the following categories were found in this order of frequency:

Able-bodied (including unclassified)	..	9,202
Old and infirm and crippled	..	4,805
Leprosy patients	..	2,067
Blind	..	1,573

Over half of the beggars in Bombay come from other regions (146).

There is a real problem where able-bodied persons are unwilling to work, and remain beggars as a matter of choice rather than necessity. In rehabilitation programs, more technical instructors are needed in proportion to the custodial and medical staff. Specific suggestions were given in the committee report for the organization and staffing of training centers. Fifty occupations were listed for existing Beggars Institutions.

There is also a problem of working with adolescent beggars, as shown by age-group data for the 2,709 beggars committed in the period from April 1, 1959, to March 30, 1960: 745 out of 2,414 males, and 188 out of 295 females, were in the age group 16 to 25 years of age; more females proportionately were in this younger group (374).

Training in crafts and skills now enables some beggars to become self-supporting, and is provided in: tailoring and button-making; gardening; agriculture and poultry-raising; spinning; clay-modeling; knitting; weaving; carpentry; cane work; broom making; leather work; bamboo work; oil-pressing; chalk-stick making; music; and soap-making (146). At the workshop run by the Salvation Army at the King George V Infirmary in

Bombay for ex-beggars, the contract work of sorting screws was lost because some of the workers did not think it really mattered which box they put the screws into. Evidently some were not ready for employment, and had to be made to adapt to the job demands or be discharged. In a Nagpur project, the folding of paper linings for tea boxes proved a satisfactory testing situation for attendance, seriousness of purpose, and willingness to work at a simple task (332).

An experiment was conducted at the Chembur Home for Male Beggars from December 1955 to March 1956 by the Occupational Therapy Training School, King Edward Memorial Hospital, Bombay, by sending groups of senior students to work at the Home. The project had a number of aspects such as preparing adapted equipment and gadgets to be used by crippled inmates so that they could feed and look after themselves (Activities of Daily Living), and even do craft work of various kinds. The study indicated that crippled, leprosy-affected, tubercular, and blind inmates could profit from occupational therapy, and that properly selected occupations had a definite place in the rehabilitation of inmates by giving them motivation to work after their discharge. Such a study indicates that occupations must be carefully selected and assigned, and a good system of incentives must include adequate payment for work done in the institution, a social casework approach to the individual, training for specific trades and development of good work habits, and placement service which for the handicapped should be linked with the Special Employment Office for the Handicapped in Bombay. Thus a more thorough investigation is needed of the occupations available in institutions, the training needed for them, the amount of payment for work, the possibilities of open and sheltered employment, and the provisions for training and education (374).

The Bombay study of beggars' homes emphasized certain points of view which are important considerations at all stages of the process of rehabilitation. Psychologically charity harms the giver and receiver alike; it deadens the conscience of the giver by allowing him to shed a feeling of responsibility for the needy, and it deadens the conscience of the receiver in that he loses his

self-respect. (One of the chief problems faced in rehabilitating beggars has been this very loss of self-respect.) India has reached a stage of conflict between a dying medieval social organization and an incoming system of socialistic democracy. It has been urged that charitable aid should never be directed to an individual but should be directed to an organized institution which symbolizes the community's desire to rehabilitate the needy and thus help them to help themselves (187). As the extended family and socially self-sufficient village disappear, authorities recognize that their responsibilities must be taken over by the State. Tackling the problem of begging in one part of a state, however, is no solution when other parts of the state do not prevent migration of large numbers of beggars to that area. Therefore all the important urban areas need to be brought under the jurisdiction of the Beggars Act, with inter-state transfer of beggars. Institutions for beggars should be regarded as self-dissolving. The problem of beggary must be attacked on many fronts, such as social security pensions; pensions for the aged, infirm, and crippled; grants to workshops; special employment exchanges; rehabilitation of those with leprosy; employment of the handicapped; and shelters for the aged and infirm. The problem of the able-bodied chronic delinquent beggars including criminals needs different institutional treatment.

In general one finds that Indian experts are dissatisfied with the types of vocational training and employment now available for the handicapped. For example, one report states that a serious limitation of the services provided for the handicapped in the 31 institutions for them in the state of Gujarat is the fact that the vocational training given is limited to certain basic trades such as carpentry, tailoring, basket-making, and weaving regardless of the preferences and aptitudes of the trainees. According to this report, a broadening of the vocational offerings is needed, as well as more trained personnel and the introduction of a variety of educational and cultural studies to avoid the present narrow focus of the training (75).

It is reasonable to expect that the industrial types of employment will continue to increase, at least more rapidly in India

than in other Asian countries, for various reasons. Although India is not well developed economically as compared with western countries, it has the advantages of a large national market of its own as well as resources of coal and iron ore. The very size of the country has also made possible the production of "an intellectual elite of considerable size and competence" which is essential for planning economic development and implementing these plans. The pace of this development may be slow, partly because of a contrast between radicalism in principle and conservatism in practice, but the directions of change have been determined (281).

At the same time, it is considered basically important to continue to encourage crafts and small-scale cottage industries and agriculture, since the large numbers of unemployed, underemployed, and undereducated people perhaps for decades will not be absorbed to any appreciable extent in large-scale industries. General improvement in agricultural practices is necessary, along with a system of land distribution to give greater incentive for efficient and productive techniques. Improvements in public health and in educational levels are essential parallel trends (281).

Chapter 6

THE BLIND

The problem of making adequate provisions for the blind is a more serious one in India than in many western countries, since India has more blind people in proportion to its total population, and since the number is actually increasing rather than decreasing as in countries where major causes of blindness are rapidly coming under control (76). The World Health Organization in 1962 gave a minimum estimate of 10,000,000 for the total number of blind persons in the world, although some experts believe the actual figure is much greater because many countries count only the persons who are *completely* blind, that is, who have no light perception at all. About two-thirds of the world's blind people live in Asia (382). India is said to have the largest number of blind persons of any country in the world, but the estimates vary from one-fifth (466, 468) to one-fourth (99) of the 14,000,000 blind persons in the world, with India having about 4,390,000. About 1,000 persons in every 100,000 in India are said to be blind versus 450 per 100,000 as a world average (99). The blind are either the largest or the second largest group of the handicapped in major cities: largest in Delhi, and second largest in Bombay and in Kanpur (468).

The 1931 census in India gave a total of 601,370 blind persons, but in 1944 a government report on "Blindness in India" placed the total number of blind persons at 2,000,000. The country-wide survey conducted by the Trachoma Control Pilot

Project, which was established by the Government of India under the Indian Council of Medical Research, estimated that 1% of the total population in India was "economically blind." This meant a total of more than 4,500,000 visually handicapped persons. If one assumes that 20% of this group were children less than 16 years of age, there were at that time 900,000 educable blind youngsters. But about 400,000 of a 4,390,000 total estimated by the Ministry of Education in 1967 were said to be of school age (185).

The sheer size of the estimates of the numbers of blind persons, for so few of whom services can now be provided, may tend to discourage governments and private agencies from undertaking projects in their behalf. Some believe that predictions of the actual number who may become blind in the *future*, restricted to a given area or group, would be less frightening and more likely to encourage the establishment of services (262).

Blindness has actually been increasing in India. It is estimated that there are at least 2,000,000 *totally* blind persons, and that for every totally blind person there are three with defective vision resulting from eye diseases. Most of the blindness is preventable or curable with appropriate services; one expert gives an estimate of 70% to 80% (99) and another 90% (490). The incidence of blindness is considered to be higher in rural than in urban areas, for several reasons:

- (1) ignorance about how to preserve the health of eyes;
- (2) ill advised self-medication of minor eye diseases;
- (3) disastrous treatment by quacks and religious mendicants;
- (4) incidence of smallpox and venereal disease, which account for more than 20% of the blindness;
- (5) prejudice against vaccination, and failure to seek treatment for venereal infection (490).

Studies at the government Training Centre for the Adult Blind also indicate that blindness is more common in the lower economic classes than in the higher.

Malnutrition is regarded as one of the main causes of blindness among children. It is reported that 12,000 children go blind every year in India because of Vitamin A deficiency (76). Among adults, industrial accidents are an additional important cause (490). A lower percentage of the total number of blind persons in the upper age brackets as compared with the West is probably due to the shorter life span of Indians.

The major causes of blindness in India are summarized as follows (232):

Infancy and childhood

- Trachoma and associated conjunctivitis
- Small-pox
- Ophthalmia neonatorum
- Malnutrition
- Dangerous games and defective toys
- Congenital abnormalities like infantile cataract
- Hereditary diseases

Youth

- Trachoma and associated conjunctivitis
- Smallpox
- Malnutrition
- Injuries in hazardous industries and occupations
- Sports
- Defective methods of reading and writing
- Solar eclipse
- Venereal diseases
- Hereditary diseases

Adulthood and old age

- Cataract
- Glaucoma
- Venereal diseases
- Diabetes
- Hypertension

Smallpox (332) and trachoma are thus the most common overall causes of blindness. According to the estimate provided

in the 1961 report of the Indian Health Survey and Planning Committee, there are between 10 and 40 cases of smallpox each year per 100,000 of the general population (281), which for a population of 520,000,000 means an annual total of between 52,000 and 208,000. Trachoma has afflicted between 38% and 78% of the population in northern and northwestern India, and 25% in other sections (281). Random surveys undertaken by the Ministry of Education during the Second Five Year Plan in Punjab, Rajasthan, Delhi, and Uttar Pradesh where trachoma is highly endemic revealed a large percentage of children under 10 years of age suffering from this disease. Of the totally blind in India, 30% had lost their sight before the age of 21, and a large number of these had lost it in the first five years of life. This underlines the importance of systematic eye examinations of all school children, followed by the education of pupil and parent concerning the nature and necessary treatment of eye diseases (490).

There is likewise an urgent need to educate the rural population concerning blindness. Nearly three-fourths of rural India is now covered by a program of community development, and the social-education organizer/administrator can help effect the necessary changes in the people's attitudes and beliefs. The lack of medical services often means that minor eye diseases go untreated. Urban eye hospitals are needed, along with mobile eye clinics and health visitors to carry their services to the villages (490). Also needed are complete ophthalmological examinations on a health insurance basis, with correction and medical treatment when indicated (90). The "Eye Camps" or clinics for eye examinations and operations, first organized in 1948, now number in the hundreds (86). Eye banks are being organized throughout India; the first one was formally opened in Bombay in 1964. Sight Conservation Committees and Centres for the Prevention of Blindness are being established. Public awareness was increased by making "Preserve Sight and Prevent Blindness" the theme of World Health Day in 1962.

In spite of these advances, there persists a fatalistic approach based on the premise that the blind will always be with us, and that nothing should be done about the situation.

Our belief in the 'law of Karma' makes us feel that we should not interfere with His dispensation, that Providence meant that the blind should live a life of dependence . . . The idea that the blind should earn an independent living by their own efforts is almost foreign to us (99).

Implicit in this approach is the tendency to regard the blind as a group in a generalized way rather than to see them as individual men and women. Yet the blind have tended to fare better than other groups of handicapped persons (186, 187), with services for the blind developing more rapidly than for the deaf or the orthopedically handicapped.

Soon after the beginning of World War II, the Government of India invited Sir Clutha Mackenzie to advise it on measures to be taken concerning the welfare of the blind in India, and to this end appointed him Adviser on Blindness to the Ministry of Health. The government also appointed a Joint Committee of the Central Advisory Boards of Education and Health to investigate the causes of blindness and to make recommendations concerning ways of improving the lot of the blind. The Ministry of Education then undertook to carry out a number of the recommendations made. The Joint Committee issued a "Report on Blindness in India" that represented India's first attempt to plan services for the blind. A war-related project was the establishment in July 1943 of St. Dunstan's Hostel for the Indian War-Blinded at Dehra Dun, as a branch of St. Dunstan's Hostel in the United Kingdom, starting with six blind veterans. Eventually this was renamed the Training Centre for the Adult Blind, and was opened to civilians. Other government services for the blind which followed the establishment of the original center were the Model School for Blind Children (1949), the Central Braille Press (1951), the workshop for the manufacture of Braille appliances (1954), and the Women's Section of the

Training Centre (1957). It is hoped that eventually a National Braille Library can be established. The government also proposes to establish Braille presses on a regional basis (5).

The First Seminar on the Education of the Blind, held at Mussorie under the auspices of the Central Education Ministry, adopted a resolution to the effect that a voluntary body known as the National Association of the Teachers of the Blind should be formed. One outcome was the organization in 1960 of the Maharashtra Association of Blind Teachers, followed in November 1963 by its transformation into the National Association of Instructors of the Blind. State branches soon began to appear, such as the Delhi branch in 1964 and the Gujarat branch in 1965 (125, 126).

The National Association for the Blind gives some scholarships for overseas training of teachers of the blind, as at the Perkins Institute for the Blind in the U.S.A. and in institutions in England. The Government of India gives fellowships to teachers of the blind to travel around the country and visit institutions for the Blind (116, 118). The first schools to introduce training courses for teachers of the blind were the Calcutta School for the Blind, the Government School for the Blind at Hyderabad, and the Government School for the Blind at Poonamallee, Madras, but these courses were offered only sporadically depending on demand (5). The first regular course for teachers of the blind on an all-India basis was a one-year program started in 1960 at Palayamkottai by the National Academy of Teachers of the Blind established under the auspices of the National Association for the Blind and the National Christian Council (5, 116). The central Ministry of Education then made plans for the establishment of Regional Teachers' Training Courses, the first being given in Bombay in 1963.

Blind teachers in schools for the blind have been appointed in the past chiefly because they needed jobs, rather than on the basis of their qualifications. It is now urged that teachers in these schools be appointed on the basis of merit rather than pity (9).

The first school for the blind in India was established in 1887 at Amritsar, Punjab, by a missionary, Miss Annie Sharp, and after it was moved in 1903 to Dehra Dun, Uttar Pradesh, it eventually became known as the Sharp Memorial School for the Blind (208). Other schools followed in this order:

School for the Blind at Palayamkottai, Madras	1890
Day School for blind children at Chhatrapati	1895
Calcutta School for the Blind at Ranchi	1897
S.P.G. Mission School for the Blind at Ranchi	1898
American Marathi Mission School for the Blind at Bombay (now the Dadar School)	1900

Before 1920 these schools had difficulty in persuading parents to send their children to them, but for various reasons the trend has been reversed since that time, and the schools now have long waiting lists (5).

Though in 1900 there were only six establishments for the blind, by 1947 there were about 50 and by 1961 a total of 94 schools and training establishments providing for about 4,000 persons. There are now more than 100 institutions providing for around 10,000 blind persons out of a total of 4,390,000, with about 30 associations concentrating chiefly on the prevention of blindness. In spite of the fact that there are about 400,000 blind children of school age, there are school provisions for only 1% of them. The percentage may be even less than this in some areas. For example, in the state of Bihar there is an estimated total of 200,000 blind persons of whom 60,000 are children, but only 300 of these children (0.5%) are at present in schools for the blind (416).

The institutions and services that are available include one workshop for the blind, four training centers for the adult blind, four industrial homes, six other homes for the blind, about 75 schools for the blind, four Braille presses, five teacher-training courses, and one agricultural and rural training center for the blind. There are no Sunshine Homes for blind babies as in England, no homes for the aged and infirm blind, and no exclusive facilities for the blind who prefer technical or commercial

careers. There is only one training center for agricultural work even though 70% to 80% of the blind come from rural areas. Setting up sufficient institutions to serve the blind alone would be financially impossible, but even aside from economic considerations, the preferable solution is integration of the blind as much as possible into normal society (99).

In 1961 (116) these institutions were listed as serving the blind in various states* :

Andhra Pradesh: 2

Assam: 1

Bihar: 5

Gujarat: 11 (13; one government school listed for blind and deaf, is now for deaf only.)

Kerala: 5

Madhya Pradesh: 3 (4)

Madras: 8

Maharashtra: 14 (19)

Mysore: 5 (6)

Punjab: 7 (8)

Rajasthan: 2

Uttar Pradesh: 13 (14)

West Bengal: 5 (6)

Delhi: 4

Jammu and Kashmir: 1

(Orissa: 1)

Of the 99 schools and institutions listed (as corrected), eight were designated for both the blind and the deaf (usually called the deaf and dumb), and 18 were indicated as government institutions.

Most schools for the blind in India provide a combination of elementary education, vocational training, and instruction in music. A few prepare the blind students for matriculation or an equivalent examination, such as the Government School for

* The numbers and comments in parentheses are corrections made in a later issue of the journal in which this report appeared.

the Blind in Madras, the Government School for the Blind in Hyderabad, and the Calcutta Blind School. Some have introduced new types of training such as chalk-making at the School for the Blind in Poona, and massage and physiotherapy at the Victoria School for the Blind in Bombay (210).

Recommended additions to present school curricula for the blind are: crafts and hobbies; clay-modelling and sculpturing; indoor physical activities such as gymnastics, boxing, dancing, wrestling, and weight-lifting; and outdoor physical activities such as track and field athletics, camping, hiking, swimming, cycling, rowing, and climbing (275). Programs incorporating such activities are being developed by the rehabilitation department of the National Society for the Prevention of Blindness and by the Dr. R. P. Centre for Ophthalmic Sciences of the All India Institute of Medical Sciences in New Delhi (462). It is also recommended that programs in schools for the blind include a Home Room, a Student Council, clubs, dramatics and music, literary societies, school trips and tours, school publications, and scouts and guides (199).

Most of the institutions for the blind are run by voluntary organizations with some subsidy from the state and central governments. The agency called "Grants Central Government" is authorized to make grants for buildings and to assist in launching new projects such as agricultural programs, new schools, and publications dealing with blind welfare. The central government has contributed 55% of the non-recurring expenditures for the development of any approved new project. The Central Social Welfare Board gives grants for equipment and maintenance and for buildings. In the states of Maharashtra and Gujarat, grants are given to all institutions for the blind with more than 25 inmates, at the rate of 30 rupees per person per year, and two-thirds of the audited expenditures, whichever is less. Other grants are given to institutions by the Municipalities at their discretion (116). The government of Maharashtra State also has a program of grants for building (50%) and equipment (66%). Some of these subsidies are being increased; for example, in 1961 the central government liberalized financial aid

to the extent of paying 75% of operating costs instead of the previous 60% (78a). Voluntary schools may be taken over entirely by the state government, as was an institution for blind boys started at Patna in the state of Bihar in 1922 by a private group of individuals; the state government took over this school in 1958 (416). Some state governments have established new schools for the blind in areas where there were none.

In the state of Gujarat there is a total of 16 institutions for the blind, 12 of which are voluntary and four state-operated. They serve a total of 200,000 blind persons. The Adult Training Centre for the Blind at Ahmedabad, founded by the Blind Men's Association of that community in 1960, is a multipurpose institution with a modern school, hostel, dining hall, and workshop. It provides secondary education and vocational training for 133 persons 16 to 40 years of age. This center has a Braille library of 3,628 volumes, and circulates books throughout India. It also publishes a bimonthly magazine called "Usha" for blind persons. Braille transcription work is given to prisoners in the Sabarmati Jail, which enables them to reduce the length of their sentences; 50 convicts have been thus employed since 1961, and during 1964-65 they transcribed more than 50,000 Braille papers (75).

Also in Ahmedabad are the Andh Kanya Prakash Griha for giving education and training to blind women, and a School for the Blind in Navrangpura, which has a nursery for blind and deaf children. The Training College for Teachers of the Blind, founded in this city in 1963, is the only college of its type in the state. A training college for social officers is founded at Rajkot (75).

The organizations and institutions serving the blind in the state of Maharashtra in 1967 were the following (370):

The Blind Relief Association, Bombay. Founded in 1919, this affiliate of the National Association for the Blind works for the prevention of blindness. Another affiliate is the Blind Relief Association of Delhi which in August 1967 held the opening

ceremonies for the society's new school buildings, and inaugurated the Jor Mal Periwal Memorial School for the Blind and Training Centre for Teachers of the Blind.

Government schools for the blind. There are three, at Nasik, Latur, and Bhandara, for admitting children 6 to 12 years old for primary education using Bharati Braille, and pre-vocational training in simple arts and crafts, music, and extra-curricular activities such as scouting.

Victoria Memorial School for the Blind, Bombay. Founded in 1902, this school admits children 7 to 16 years of age, with girls as day students only. Marathi and Gujarati are the languages used as media of instruction, with both academic and vocational instruction.

Dadar School for the Blind, Bombay. Founded in 1900 by the American Marathi Mission, this school for 85 youngsters was taken over in 1948 by the Blind Relief Association. Pupils who have passed the VII standard are sent to regular schools.

Industrial Home for Adult Blind Women. This residential home, located on the grounds of the Dadar School, was established in 1957 to admit about 30 blind women 18 to 40 years of age.

Happy Home and School for the Blind, Bombay. The home was established in 1925 and the school in 1948. It admits court-committed blind children, 61 in all, for academic and craft instruction, who like the pupils from the Dadar School are sent to regular schools when they reach the VII level.

Poona Home and School for the Blind. Founded in 1935, this institution for boys was expanded to include a unit for girls in 1960. It provides free room and board, clothing, medical aid, and vocational training for 100 boys and 35 girls. The girls' unit will eventually accommodate a total of 100. Nearly 200 blind persons trained in this institution are now self-supporting (350). Training in physical therapy is also given here.

The Andha Vidyalaya, Nagpur. Since 1930 this residential institution has accommodated 80 persons, with separate arrangements

for boys and girls, and like the Poona School has an attached sheltered workshop for blind adults.

School for the Blind, Dhulia. This residential school founded with a government grant in 1963 for 25 pupils now has 40 blind boys.

The N.S.D. Industrial Home for the Blind, Worli, Bombay. This Home gives vocational training and employment for 80 to 100 adults, provides a pre-employment training center, and has organized an orchestra much in demand to play for public functions. *The M. N. Banajee Industrial Home for the Blind, Bombay.* Founded in 1956, this Home provides 50 adults with on-the-job vocational training.

The Workshop for Blind Men, Poona. This residential sheltered workshop, operated by the Poona Blind Men's Association, provides 30 persons with work such as chair-caning, packing, and the manufacture of blackboard chalk.

The Workshop for the Blind, Bombay. This was the first sheltered workshop for the blind in India. It was established in January 1963 by the National Association for the Blind with U.S. Social and Rehabilitation Service support. It now undertakes contracts for assembly, packing, etc., giving intensive training in light engineering jobs in preparation for employment in the open labor market. The industrial sections include manufacture of envelopes and cardboard boxes, tailoring, woodwork, brush-making, stationery-making, candle-making, and fly presses. Contracts are secured from industrial firms and factories.

School for the Blind, Taluka Kinwar. This village school for 28 pupils was started by a voluntary group in 1962, with plans for training pupils for the agricultural work of the area.

The Maharashtra State Council on Blindness. This autonomous organization counsels the state government concerning the prevention of blindness, and the medical treatment, welfare, and rehabilitation of the blind. It has also constructed a building at Worli to provide more modern vocational training for blind adults.

The National Association for the Blind. This voluntary society, founded in 1952, serves to coordinate the work of various organizations for the blind, to work for the prevention of blindness, to initiate new programs and organizations for the blind, and in general to promote the interests of the blind (5, 208, 210).

This association, which is a member of the World Council for the Blind, is the leading organization for the blind in Maharashtra State as well as in India as a whole. About 80 of the institutions and organizations for the blind in India are affiliated with this association. Among its diverse accomplishments have been the M. N. Banajee Industrial Home for the Blind, Jogeshwari, Bombay (1956); the National Society for the Prevention of Blindness, New Delhi (1959); the Tata Agricultural and Rural Training Centre for the Blind, Phansa (1960); the National Academy of Teachers of the Blind, Palayamkottai (1960); the NAB-Lions Blind Welfare Library, Bombay (1960). In addition it has started a rehabilitation and adjustment center for the blind in cooperation with the N.S.D. Industrial Home for the Blind at Worli, and operates a Workshop for the Blind there which began to function in 1963. It runs an Employment and Placement Service for the blind and a Home Teaching Service, gives scholarships to blind students throughout the country, secures other scholarships for training blind welfare workers, and publishes the journal "Blind Welfare." This journal, which first appeared in June 1959, is now issued three times a year, in April, August, and December. According to the association's statement, this publication "contains articles on Education, Vocational Training, Rehabilitation, Employment and other aspects of work connected with the welfare of the blind." It is intended primarily for workers in the field of blind welfare (377).

The National Association for the Blind has also outlined a plan for a comprehensive rehabilitation center for aiding the newly blind as well as the blind who have not had any institutional or rehabilitation training. The center would investigate rehabilitation methods which would facilitate the integration of the blind into the normal community, and would serve as a pilot

project for establishing "standards and methods of service which are practicable and suitable for general application in Indian conditions." At Mount Abu the association is now setting up this center, which it considers to be the first comprehensive rehabilitation center in India. It is located in a large private bungalow which has been donated for this purpose, and is to provide three courses a year, each accommodating about 50 adults. Services are to include orientation and mobility, psychological adjustment, engineering, traditional crafts, home economics, communication skills, and rural training (174).

The Home-Teaching Service of the association in 1961-62 referred 34 adults between the ages of 17 and 50 to the Home Teacher, who secured for nine of them admission to Industrial Homes for the Blind in Bombay. Nine were admitted to the rehabilitation section of the N.S.D. Industrial Home for the Blind, and one was taught English Braille for his B.A. examination, and arrangements were made for him to learn typing at a local commercial institute. Braille, handicrafts, and mobility were taught to all clients. Two clients above the age of 50 were referred, and one of them, a deaf-blind woman, was given instruction in Braille and handicrafts. The Home Teaching Service is still a pilot project of limited scope, but it is hoped that it can be expanded rapidly to meet the needs of more of the 5,000 blind persons in the city of Bombay (301).

Future plans of the NAB include provision for the multiply handicapped blind and a Tape Taking-Book Project, a hostel for the blind employed in Bombay, and a new Braille press. Funds come from both voluntary and governmental sources. State branches have been formed in Madras and Kerala, and others may appear shortly (5).

In spite of increasing assistance in the field of education of the blind, it is charged that half the institutions are schools in name only, and most of them have serious limitations in staff and other facilities (109, 186), the quality of education provided is poor, and there is no prescribed curriculum or minimum standards. Lack of previous schooling on the part of the young-

sters entering these schools at a later age makes it impossible to divide groups on the basis of age, and so one often finds a class with children of ages ranging from 7 to 14 (5). In 1959 it was stressed that there was need for trained headmasters of schools for the blind, a qualified and trained staff, schools for different age groups, a training center for teachers of the blind, suitable equipment for schools for the blind, regional Braille presses, adequate salary scales and working conditions for teachers, separate inspectorates in the states for inspecting the schools for the blind, and a standardized curriculum in schools for the blind corresponding to that for sighted pupils with the provisos that emphasis be given to rural educational services for most blind children and that these services also have a vocational slant. Vocational guidance needs to be provided by the schools, and employment exchanges for the physically handicapped established throughout the country at central points (201). Since that time training programs for teachers of the blind have been established and there are now nine employment exchanges for the physically handicapped that include the blind, but in other respects the recommendations have yet to be implemented.

In Maharashtra State, school-age blind children number between 50,000 and 60,000. Many educators despair of ever being able to provide enough special schools for them. Schools for the blind need to be made comparable to those for sighted children. This means graded classes; secondary and vocational schools as well as primary education; incentive salary schedules for teachers of the blind and at least as favorable teaching conditions; special books and appliances as needed; increase in government subsidy to permit expansion and improvement of programs; increase in integrated education in the public schools; enlargement and improvement of training facilities for teachers of the blind; and standardization of the curriculum for the blind (201, 202).

Most of the schools for the blind accept students between the ages of 7 and 18 to 21 years (116), though some admit youngsters aged 5 to 16 (5). The age of admission depends

largely on the age when blindness occurs. All the services are usually free. Most of the schools provide only primary education, and the more progressive institutions follow the syllabus prescribed for the local municipal primary schools. These study language, arithmetic, history, geography, nature study, and domestic science (for girls). Most children are required to learn the regional language, the national language Hindi, and in some instances English as well. The majority of the schools emphasize vocational training in crafts and music, both vocal and instrumental, and some institutions also have departments for the adult blind where they are taught crafts (118). A few schools now offer secondary education in addition to primary, while others send their better students to nearby high schools for sighted children (5). There is a movement to get the government to establish a high school to provide secondary education for blind youngsters, and to encourage integrating of the blind with sighted pupils (468).

No provision has yet been made for the proper care and education of the pre-school blind child, even though there are many scattered pre-primary programs for normal children. The aim is to keep the young child in his own home, but nurseries are needed for orphaned children and for those whose home environment is unsuitable. Recommendations have been made for pilot projects of nurseries limited to between 20 and 25 children (10). Studies have indicated that blind children are slightly lower in intelligence than sighted youngsters, retarded in educational and other achievements, and somewhat less mature socially, but these limitations could be offset by proper education and training (400), especially if begun in the pre-school years.

Relatively little has been done to educate the partially sighted child, though the National Society for the Prevention of Blindness has made some efforts on their behalf. The organization initiated a program in 1917 that included giving advice to parents, educators, and other professional personnel on the proper use of classroom equipment and materials for partially sighted children; granting scholarships for preparing teachers and supervisors to work with such children; sponsoring advanced workshops for

these teachers; and giving consultative assistance in the planning and conducting of summer courses at universities and colleges. In 1968 this society turned over its program for the partially sighted to the American Foundation for Overseas Blind, believing that this organization could deal more effectively with these problems. At present only 10% of the country's estimated 99,410 partially sighted children in the schools are receiving special services, though the estimate indicates neither the source of these data nor the basis for classifying the partially sighted (313).

A major advance in the education of the blind occurred in 1952 when a uniform Braille code—Bharati Braille—was developed which could be used for all Indian languages, replacing a total of at least ten Braille codes that had been used previously, and thus ending what was called “the battle of the types.” Since Indian experts had not been able to standardize the Braille code themselves, the problem was referred to UNESCO in 1949, and this organization evolved the Bharati Braille on the basis of the principles recommended by the World Braille Conference held in Paris in 1950. Thus it is possible today for a blind person to read books in other languages as well as his own since the Braille symbols have a phonetic basis applicable to the sounds found in any languages. However, as yet no Braille contractions and abbreviations and systems of Braille mathematical and musical notation have been adopted (5). Today the Bharati Braille is used in nearly all the institutions for the blind. The Government of India has now appointed a committee to draw up a “contracted” Braille code for Hindi.

Efforts are beginning to be made to integrate the blind into regular schools. The National Association for the Blind has proposed a country-wide project, but the American Foundation for Overseas Blind considers a single state program more feasible as a start. Discussions of this suggestion have been held among the Ministry of Education, the National Association for the Blind, and the Far East Regional Office of the Foundation (174).

The first integration of blind children in regular schools in Maharashtra State, and perhaps in the whole of India, began

on an experimental basis in June 1958 when two 11-year-old blind boys were enrolled in the New Activity School, a public school in Bombay, after they had been privately tutored for several months in English Braille, both reading and writing, so that they could follow the school lessons easily. The special teacher who gave them supplementary help when needed reported that results had been very favorable (115). In April 1967, seven blind children were enrolled here.

The idea that it is more economical to integrate the education and training of the blind with that for the sighted, rather than to finance separate institutions, is gradually gaining ground (99, 412). Some integrated education for the blind is occurring at the Ludhiana Public School, where six blind students were enrolled in 1964. The faculty is being given assistance by an experienced teacher of the blind. In Maharashtra State as a whole there are now nearly 75 blind students in regular schools, though the total for India is probably less than 500 at present, with fewer than 100 attending regular colleges (97). The Ministry of Education of the central government has now accepted the principle of integration, and hopes to have 9,000 blind pupils enrolled in regular schools by the end of the Fourth Five Year period (208). The success of such an effort depends on the availability of a resource teacher or itinerant teacher in each regular school which accepts blind pupils, though as yet only two or three schools in Bombay have such a teacher (99).

In the meantime residential institutions will continue to have an important role to play. A pilot project demonstrating the kind of program which should be offered in these institutions is the Model School for Blind Children which is an integral part of the National Centre for the Blind at Dehra Dun. This school, administered by the National Department of Social Welfare, is located in the village of Rajpur in the district of Dehra Dun at the foot of the Himalayas. It was inaugurated on January 4, 1949, since January 4 was the birthday of Louis Braille. It started out with five classes of elementary instruction for 50 children, at no cost to their parents. Admission is open to blind children 7 to 12 years of age, of any caste or creed or economic

status. An interview and various tests for ascertaining ability are part of the admission procedures. Hindi is the medium of instruction, with English taught as a subject in the curriculum. The activities of daily living are stressed, as well as extracurricular activities such as music, physical education, gardening, and school trips. In 1966 a secondary-school program was added, so that the school now offers a full program from Class I to Class X. The most frequent single cause of blindness in these children is smallpox (2) .

Other schools have also served as models. An example is the Dadar School for the Blind in Bombay, founded in 1900 by the American Marathi Mission, which since 1948 has been operated under the auspices of the Blind Relief Association, Bombay. Blind girls between the ages of 4 and 10 years are admitted from any part of India between June 10 and July 31 of each academic year. The School provides pre-primary, primary, and secondary education, and in addition to academic subjects, music, handwork, physical education, and domestic science are taught. The medium of instruction is Marathi, although Hindi and English are also taught as part of the curriculum. It is a residential institution, and all provisions are free. A library of Braille books, a museum, a science laboratory, and various recreational facilities and projects are provided. The woman superintendent has a diploma for teaching the blind from the United Kingdom, and her assistant was trained at the Perkins School for the Blind in the U.S. Most of the teachers have been trained as regular teachers (91).

Another example is the Andh Vidyalaya School for Blind Girls in New Delhi, founded in 1950 by the Rashtriya Virjanand Andh Vidyalaya Society. Its present building was formally opened in January 1957. Starting with four girls in 1950, the school now has 135 girls aged 6 to 16, who are admitted without regard to caste or religion. The girls have a curriculum of general education from the elementary to higher secondary level; the first to appear for the Higher Secondary Board Examination were ten girls in 1968. Training in both instrumental and vocal music is given up to graduate level; by 1967 a total of 81 girls had successfully completed advanced courses in music. In addition

the girls are given training such as chair-caning, weaving, knitting, and plastic work. They pay no fees. The Vidyalaya Society has drawn up a Five Year Plan with the goals of setting up a nursery school, a workshop, a teacher-training center, a Braille press, and a rehabilitation center which will include training in agriculture and rural crafts.

The Blind Boys' Academy at Ramakrishna Mission Ashrama, West Bengal, near Calcutta, gives academic education based on the courses of the Board of Secondary Education, West Bengal, and the Calcutta University. In music they study courses offered at a music university at Lucknow. They also receive training in home crafts and rural occupations. Two graduates are teachers at higher secondary schools for normal boys, one is a businessman, and others are music instructors and craftsmen. A similar combination of regular school education, music training, and vocational training is found in a school for 60 blind boys in Patna, the state of Bihar, where they are taught caning, bamboo work, and the manufacture of plastic goods (416).

Advanced training and education is made possible for blind students through a system of scholarships from the central and state governments. The Ministry of Education of the Government of India gives post-school scholarships to the blind for higher education or technical or professional training, the scholarship being allocated for a one-year period to those studying at educational institutions recognized by the central or state government. Scholarships were awarded by the central government to 185 blind students during the period of the Second Five Year Plan, and 87 during the first year of the Third Five Year Plan (210). The State of Maharashtra Labour and Social Welfare Department offers scholarships to blind students studying in primary and secondary schools, colleges, and technical institutions, and the state of Gujarat offers similar scholarships. The National Association for the Blind gives scholarships for blind students attending regular day schools and colleges, and also helps students to get scholarships for higher studies at home or abroad from local charitable trusts. For example, it serves as a clearinghouse for applications for grants from the Royal Commonwealth Society for the Blind, London.

Blind students are encouraged in still other ways to attend regular colleges and universities. The Universities of Bombay, Agra, Hyderabad, and Baroda exempt blind students from the payment of examination fees, and have asked the colleges affiliated with them to exempt them from the payment of tuition fees. In Maharashtra and Bengal, blind students need not pay fees for "writers" supplied to them for their examinations. A few blind students have been able to earn university degrees, some having secured Masters' and Law degrees. One blind person was awarded a Doctorate in Sociology by the University of Bombay (9). A few blind persons have become lawyers, lecturers at colleges, insurance agents, publicity agents and workers in the field of blind welfare (5). For example, Mr. Suresh Ahuja, Executive Officer for the National Association for the Blind, is also an insurance agent (7). Dr. Lal Advani, director of education for the handicapped within the Department of Social Welfare in the central government, is himself blind.

Increased attention has been given to the employment needs of the blind. One estimate is that only about 25% of the blind in India can be made capable of doing some useful work by means of which they can earn a living (358). There is no opportunity for this within the home itself. It has been recommended that in a homeworkers program, a trained blind person be provided with the necessary tools and materials at cost by the organization in charge, which should also employ supervisors to check on the quality of products, deliver raw materials, and collect finished goods for sale. However, no Home Workers Scheme has yet actually been established along these lines as planned by the central government.

The chief occupations of the blind at present are the traditional craft occupations, teaching the blind, and some open employment. They usually cannot earn a living with the traditional trades, and the number of institutions for the blind is not large enough to provide sufficient opportunity as teachers of the blind. The best prospects for the future lie in open employment with its better pay and greater variety of work. Agricultural pursuits and sheltered employment are possibilities even though these are little developed as yet in India (358). The blind operate

vending stands or sales kiosks, run small shops under home-worker programs, and work as telephone operators, stenographers, or dictaphone typists, and masseurs (99).

The intensified efforts in the past decade to expand employment opportunities for the blind have often started with Homes for the Blind as extensions of existing schools for the blind. The first of such industrial sections was established at the School for the Blind in Palayamkottai, and another was started in 1917 at the Victoria Memorial School for the Blind in Bombay. Ten years later this school was renamed the N.S.D. Industrial Home for the Blind in memory of Lala Narsingrao Shivaji Dharmaji who had bequeathed the school a large endowment. There are now several industrial homes where the blind engage in basket-making, chair-caning, and weaving, receiving room and board and occasionally some pocket money as well on the basis of work produced (9, 10).

The concept of placement of the blind in open employment was advanced by the formation of the Employment and Placement Committee of the National Association for the Blind in 1954 (9, 10). Employment in the open labor market is available for the most part in large cities (99). The jobs in which the blind are placed are usually routine, repetitive ones (421), but they at least are paid at the same rate as the sighted (9, 10). The Workshop for the Blind at Worli, Bombay, has successfully placed about 250 blind persons in open industry after training them for skilled and semi-skilled work in light engineering plants and factories (99). The best future prospects in open employment lie in the field of light engineering. The job performance of those placed so far on machine and assembly lines has been favorable, though the general public and most potential employers are not aware of this fact. Most employers have a strong prejudiced belief that the blind cannot work in factory situations. They need demonstrations of successful performance, and to this end more facilities are needed for training, placement, and help in job adjustment for the blind (358).

Experience in the nine special employment exchanges for the physically handicapped indicates that the blind are the most

difficult to place. It is felt, however, that it is better to persuade industrialists to employ the blind than to specify a quota (99). The employment office at Madras has placed 137 blind persons in work such as general engineering, electrical engineering, chemicals and pharmaceuticals, textile and other industries. It has also placed 25 blind workers in various jobs in the Indian Telephone Industries at Bangalore. The National Association for the Blind, in collaboration with the Special Employment Office in Bombay, has placed 136 blind persons in work in textile mills, factories, and hospitals over a six-year period (9).

Training and vocational rehabilitation of the blind can be secured in a number of places. The most important center for adults is the Training Centre for the Adult Blind at Dehra Dun operated by the central government, which now has a Women's Section. Craft training is also given at the N.S.D. Industrial Home for the Blind, Worli, Bombay; the M.N.B. Industrial Home for the Blind, Jogeshwari, Bombay; the Industrial Home for Blind Women, Dadar, Bombay; and at industrial homes in Poona, Nagpur, Ahmedabad, Delhi, and Palayamkottai. Rehabilitation units are attached to the N.S.D. and M.N.B. homes. The National Association for the Blind operates the Tata Agricultural and Rural Training Centre for the Blind. All these training centers have sheltered workshops where the blind work on a piecework basis or get monthly salaries. Articles are sold usually on contracts to various government departments.

Referrals for special training in these institutions are also made as part of the rehabilitation services provided for ex-servicemen. Rehabilitation of disabled veterans is a continuing concern, as illustrated by the case of an army officer blinded in the 1965 conflict between India and Pakistan (425).

The schooling given the blind needs to be directed more effectively than at present toward realistic employment opportunities. Since more than 3,600,000 of the blind live in rural India, training programs related to rural living are necessary. A 1963-64 survey indicated that 4,159 blind children (of whom 723 were girls) were receiving education in the 100 schools for the blind,

but this left most of the 900,000 estimated total of those under 16 without any kind of education. Interviews with 580 blind children in four states showed that the average age of admission was 12 for girls and 11 years 10 months for boys, though many of the children were over 15 when they were first admitted. Forty schools estimated that out of 4,584 children who had left these institutions, only 1,252 or 27.3% had become self-supporting. One school reported that only 3.35% of its children had been able to earn a living after leaving the school (382).

The residential Rural Institute for the Blind for which plans are being drawn up, is to accept children at the age of eight and during the first four years provide primary education consisting of 75% academic work and 25% practical. In the next two years of pre-vocational work, half of the program would be a practical one. There would follow a period of specialization in poultry-keeping for two to four years, depending on the aptitude of the individual. Those showing an aptitude for agriculture or animal husbandry would be sent to the Tata Agricultural and Rural Training Centre at Phansa for training. Upon completion of his education and training at the Institute, the youth would be helped to establish himself in his home village through the After-care Programme of the Institute (382).

Some of the rural jobs which the blind can handle successfully are:

- (1) agriculture,
- (2) horticulture and nursery work,
- (3) floriculture,
- (4) rearing of livestock,
- (5) animal husbandry and dairy farming,
- (6) poultry-raising,
- (7) small-scale and cottage industries and rural crafts and traders,
- (8) running small shops, sales kiosks, and vending stands, and
- (9) independent professions.

Successful placement in work of this variety involves the efforts of blind welfare workers, who must explore all possible avenues

of employment rather than confine their search to jobs in workshops or open industries (97).

The Tata Agricultural and Rural Training Centre for the Blind sponsored by the National Association for the Blind is located on a 240-acre farm on the seashore at Phansa in Gujarat. It is named for the Tatas who donated the original land for the experiment in 1960. The farm consists of thousands of coconut and mango trees, rice paddies and other crop areas, a dairy and poultry setup, a workshop, and a village where the blind and sighted live side by side. All costs are free to the participants. The course of instruction depends on an individual's needs in relation to eventual independent life in his native village, and may last one to two years. The Centre plans to train and resettle 50 to 75 blind persons annually. It costs an average of 2,500 rupees to train a blind man here, and an equal amount to resettle him and provide him with irrigated land, cattle, poultry, tools, etc. (98, 440).

Another important training center is the government-sponsored Training Centre for the Adult Blind at Dehra Dun, the largest institution of its kind in India. This center at first provided training only in cottage industries such as weaving, caning, basket-making, and knitting. By the end of 1949, 192 men had been trained; thus, since most of the blind veterans had now been trained, the center was taken over by the Ministry of Education in 1950 to be used for both veteran and civilian blind men.

Eligible applicants have no major handicap other than blindness, and are between 18 and 40 years of age. They are divided into two categories: (1) those who lost their sight recently, not more than three years prior to the date of admission, who before becoming blind either attended an educational institution or were employed, with a certificate to this effect; and (2) those who lost their sight early in childhood or many years ago, who have attended an institution for the blind for at least three years, with a certificate to this effect. Priority is given to those who became blind within the previous three years, war-blinded defense and

civilian government personnel, persons referred by agencies who intend to hire them after training, and candidates from the "Scheduled Castes" and the "Scheduled Tribes," for whom a 20% quota is specified. For the second priority group the age of admission may be extended to 50.

Training programs fall into three categories:

1. Cottage industries: weaving, spinning, chair-caning, mat-making, candle-making, plastic-moulding, elementary carpentry, knitting, domestic arts, carpet-making, and doll-making.
2. Industrial work: light engineering, assembly work, cycle assembly or repairing, and inspection of components.
3. Professional work: Bhāratī Braille, standard English Braille, Braille shorthand in English, typewriting in English, and typewriting in Hindi.

The program of training thus combines rural crafts with skills applicable to urban industrial settings. The length of the training period ranges from one month for candle-making to two years for weaving, chair-caning, and mat-making. Each trainee is on probation for a period of three months. Music, dramatics, gardening, sports, excursions, and physical education are also part of the program.

Employment offices, both special and regular, give the trainees help in finding employment. The Training Centre has a Trainee's Fund combining voluntary donations and government grants which may be used to help trainees get started in a particular occupation. Or the Superintendent may give a small allowance to pay for transportation to the place of employment and for maintenance for the first month or two. Each trainee sends in a quarterly progress report for at least two years after leaving the Centre.

The Women's Section of the Training Centre for the Adult Blind was opened in 1957 at a location four miles from the men's

section of the center. Starting with 20 trainees, the number rose to 35 in 1959-60. The women are taught weaving, winding, knitting, chair-caning, spinning, and carpet-making, with some of the trainees learning more than one trade. Instruction in domestic science is included. Like the men, the women learn Bharati Braille and music, with indoor games and listening to the radio popular with them as with the men. No woman has so far taken the various vocal and instrumental music examinations. Recently a volunteer undertook to teach them the intricacies of the classic Indian dances, which has resulted, according to one reporter, in a deeper appreciation of music in general (101).

There are 71 staff members for the men and 17 for the women. In 1954 a small sheltered workshop was attached to the center. While the workshop employees receive no pay, they have benefits such as free accommodations. It is hoped that in the future a shift can be made from cottage industries to the engineering trades.

In some industrial homes for the blind, some pocket money is provided for the work performed. At the N.S.D. and M.N. Banaji Industrial Homes for the Blind in Bombay, this money is paid on the basis of output to serve as a production incentive (9).

A workshop and rehabilitation training unit is maintained for the blind at Worli, Bombay, by the National Association for the Blind. This three-year program started in January 1963 with 31 workers and now has 104, 60 of whom are residential. By April 1967 a total of 192 blind persons had been given training, who came from 12 different states. The Workshop gives training in the manufacture of brushes, wooden articles, envelopes, and simple garments, with the purpose of preparing and enabling the blind to perform work in open industry without much difficulty. In addition to such work, there are contracts for assembly work and the manufacture of component parts. In the Light Engineering sections workers with an aptitude for machine work are given experience in the handling of machines normally used

in manufacturing plants. Instruction in the operation of a telephone switchboard is also given (188). The workshop, registered under the Factories Act of 1948 and the Bombay Public Trusts Act of 1950, receives a yearly grant from the state government of 100,000 rupees or two-thirds of the audited expenditures, whichever is less, in addition to a U.S. Vocational Rehabilitation Administration grant of 500,000 rupees for the period 1963-66 and a similar sum for 1966-69. Income from the various sections ranges from highest to lowest as follows: woodwork, brush-making, tailoring, assembly, and envelope-making.

A social worker visits the home of the trainee to study his family background and to provide guidance, a medical check-up is given by an ophthalmologist, and a short aptitude test is administered to determine a suitable vocation for the trainee. He learns Braille in English, Hindi, and Marathi, and gets an elementary knowledge of tailoring, telephone operating, carpentry, brush and envelop-making, time-reading, ironing, shoe polishing, etc. In the Domestic Section the trainee is taught personal grooming, cooking, table-setting, and serving. A white cane is used, and practical training is given in the use of public transportation. In the Contracts Department, the blind undertake bulk orders from various industries to make brushes, stationery, paper coat covers, canvas bags, crates, uniforms, linens, and woodwork. They also perform assembly work, tube bending, and packaging. By April 1967 a total of 60 persons had been placed in industry. A special officer visits various places of business to locate appropriate routine jobs and to persuade employers to hire the blind. The National Association for the Blind also has an officer, trained in the United Kingdom, to check on the progress of those placed in open employment and to help them with their adjustment problems.

The N.S.D. Industrial Home for the Blind in Bombay was founded in 1917, with a group of a half dozen men being taught canework. Financing comes from various sources: (1) government subsidies from the Central Social Welfare Board and Ministry of Education; (2) public contributions; (3) earnings of

the blind themselves from their tailoring, carpentry, music, brush manufacturing, brushwork, etc.; (4) an annual subsidy from the National Association for the Blind. Applicants come from all over India; they must be males over 18 years of age. Free room and board and medical service are provided. They are paid according to output and type of work. Various committees composed of residents have responsibility for matters such as food, recreation, and debating. The orchestra earns money from public performances. By 1957 three new sections had been added, in rehabilitation, assembly, and pre-employment. The rehabilitation program lasts about three months, and emphasizes mobility training, personal habits such as cleanliness, use of aids and appliances to extend the friction of residual senses, and preliminary training for industrial operations. Plans are being made to add a nursery school for blind children and an elementary school for those aged 5 to 12 (207). The Industrial Home celebrated its Golden Jubilee in March 1968 by organizing the first Maharashtra-Gujarat Sports Meet of the Blind (313).

The Industrial Home for Blind Women was established in Bombay in 1957 under the auspices of the Blind Relief Association, Bombay. It is located on the premises of its sister institution, the Dadar School for the Blind. Blind women 16 to 40 years of age are given, without charge, the following kinds of instruction in Marathi: (1) intensive training in vocations such as weaving, tailoring, canework, and basketry; (2) training in general mobility indoors and outdoors; (3) basic elementary instruction, including Braille and practical arithmetic; and (4) music. They have a Recreational Club established by the Lions Club of East Bombay. The woman superintendent was trained in rehabilitation at the Pilot Adjustment Centre in Manila, and the assistant superintendent is a trained occupational therapist. It is hoped that in the future a training center plus sheltered workshops can be established, as there are no such facilities in India now for visually handicapped women (178).

In March 1967 the Blind Relief Association inaugurated the Technical Training Centre for Light Engineering and Sub-contract Workshop for the Blind in New Delhi. The purpose of the

center is to enlarge the scope of employment opportunities for the blind in industry. The workshop provides opportunities for research concerning the rehabilitation of the blind (supported in part by SRS funds), and the Technical Training Centre assesses the aptitudes and abilities of the blind trainees, gives them training based on their aptitudes, and maintains a placement office to keep in touch with industries in order to secure jobs for the trained workers. This project was made possible in part by a grant from the U.S. Vocational Rehabilitation Administration. The services of the center would be complementary to those of the Institute of Ophthalmology of the All India Institute of Medical Sciences. A World Conference on the Blind was held in India in 1969 (444).

The blind are now being taught to operate machine tools such as lathes, power presses, and power drills in a pilot research project aided by an SRS grant. A Light Engineering Workshop has been established at the Industrial Estate, Guindy, in Madras, where training is free. The program started in May 1967 with 20 trainees 20 to 25 years of age from different parts of South India, who had a basic general education. During the first 2½ months of the five-month course they learn all the operations of a fitter and thus work with hand tools in filing, chipping, shaping, drilling, and turning. During the second half of the course they learn to use power tools such as lathes and drills, with the aim of achieving the same skill and precision as those of a sighted worker. Finishing items with the one-thousandth of an inch error allowed for normal industrial work means even more rigorous training for the blind than for the sighted. The project includes follow-up service for trainees placed in industry, by means of two Placement Officers who study their problems, check on their progress, and investigate possible placement opportunities. They explain the training program to potential employers and urge them to visit the workshop, to get first-hand evidence of the blind worker's capacities and the quality of his performance. The first group of 12 workers who completed the five-month program left the workshop in December 1967 and another group replaced them (438).

Sheltered workshop employment for the blind is therefore considered desirable only as an alternative when regular employment is not available or feasible. The disadvantages of sheltered employment include the fact that it is an expensive form of employment usually requiring subsidies, and it results in segregation of the blind from the normal world (9).

Special help is given the blind in finding employment not only by individual institutions but also by central exchanges and centers. To facilitate the securing of employment, the Ministry of Education established at Madras in 1954 a small Employment Office of the Training Centre for the Adult Blind, and by March 1961 this office had placed 137 ex-trainees in 18 different industries, including the Indian Telephone Company, Bangalore, Cycle Industry, Motor Industry, Metal-Box Industry, and the Match-making Industry. The highest earnings were in the cycle industry. The staff of the center itself also makes every effort to place its trainees, and between 1950 and 1961 had placed 54 persons: eight craft instructors, three principals of institutions for the blind, nine music instructors, and the remaining 34 in sheltered workshops. Thus the center and the Employment Office together placed a total of 191 blind persons by 1961.

The blind are also assisted in finding employment by the Special Employment Offices for the Handicapped established by the central government, with one in each state. So far nine of the projected total of fourteen are functioning, the first having been opened in Bombay in March 1959 and the second in Delhi in March 1961. These offices are joint projects of the central and state government, with cooperative financing. The National Association for the Blind, in a brochure on the Symposium on Employment and Placement (held March 27, 1965, in Bombay) gives a table for the annual placement of the blind in open industry from 1952 to 1964 (306).

THE NATIONAL ASSOCIATION FOR THE BLIND
(EMPLOYMENT & PLACEMENT COMMITTEE)
ANNUAL PLACEMENT OF THE BLIND IN OPEN
INDUSTRY · 1952-1964

Year	Textile Mills	Factories	Hospitals	Commercial Firms	Blind Institutions	Total
1952 to						
1955	24	3	3	1	6	37
1956	10	11	—	—	—	21
1957	16	12	2	—	2	32
1958	6	9	1	—	5	21
1959	8	15	—	1	—	24
1960	11	9	—	—	3	23
1961	15	17	—	—	—	32
1962	6	6	—	—	1	13
1963	4	31	—	—	—	35
1964	11	41	1	1	—	54
TOTAL	111	154	7	3	17	292

Barriers to suitable employment are not actually presented by existing provisions. When the Chief Inspector of Factories was asked if there were any objections to employing blind persons, he replied: "The employment of physically handicapped persons is not barred under the Factories Act, 1948, merely because of their handicap. Visually handicapped persons can, therefore, be employed in factories without any special permission from the Inspectorate" (136). In interpreting factory legislation as it applies to the safety and comfort of the able-bodied worker, it is usually evident that the same provisions can be applied to both the blind and sighted worker (136).

Although there is no legislation protecting the blind or providing pensions for them (9), there are still many special ser-

vices available for them. These include a variety of publications and appliances. Both the Central Braille Press and the workshop manufacturing special appliances (projects sponsored by the central government) are located in the Training Centre for the Adult Blind. The workshop produces educational materials such as Braille writing apparatus as well as some special games such as drafts and checkers. These products are sold at cost to blind individuals and institutions for the blind. Still other equipment is manufactured by private agencies (116, 118).

The Central Braille Press has produced 61,000 volumes of Braille literature, of which 5,000 have been sold at special rates in India and abroad (162). Although the Press has concentrated on publications in Hindi, it has also produced books in five other Indian languages as well as English; it has published 125 titles in English, Hindi, Gujarati, Marathi, Tamil, Telugu, and Bengali (208, 210).

In addition it publishes a quarterly journal called "Alok" which consists of articles of general interest selected from other Hindi journals, and issues 250 copies. During the year 1964-65 the Press began the publication of two additional Braille magazines, these in Gujarati — "Asha" for a Rajkot institution and "Usha" for the Blind Men's Association in Ahmedabad. The Braille publications are sold at a third of the cost of the materials to blind persons and institutions for the blind. The Braille Press operated by the National Association for the Blind (started in 1958) publishes books in Hindi, Marathi, and Gujarati. The Calcutta School for the Blind has its own Braille Press (116). The National Library for the Blind has over 6,000 Braille volumes in English and Indian languages lent without charge to readers all over the country. The central government has urged all state governments to consider establishing Braille sections in the state central libraries (208, 210).

A library of ink-print reference books on all aspects of work for the blind throughout the world is maintained by the National Association for the Blind. The Blind Men's Association in Bombay has a Braille Circulating Library with over 700

volumes in Marathi, Gujarati, and Hindi Braille covering a variety of subjects, and a few in English Braille, and charges a small fee for the use of these materials. This association has also started a "talking magazine" for the blind, a tape-recorded journal containing items in Hindi, Marathi, and Gujarati. Members of the association take tape-recorders to various schools and institutions for the blind in Bombay and play the recorded magazines for the students, who often themselves contribute musical and dramatic items for the issues (116). College students transcribe "Talking Books", which are distributed widely without postal charges.

Other services for the blind include: (1) exemption from customs duty for Braille apparatus and equipment imported by recognized public institutions for the blind, and often on gifts received by these institutions (208, 210); (2) postal exemptions on Braille literature sent to places in India or abroad, with second-class mail rates charged for literature sent by air (116); (3) exemption from the payment of examination fees or fees for writers used by blind students in many universities (5); (4) free reading service supplied by the Blind Men's Association, Bombay, for blind students attending regular day schools and colleges, with volunteers acting as readers and helping students to obtain study materials; and (5) reduction in travel fares.

On railways, a blind person with an escort pays a single fare, and one-fourth the fare if travelling alone (5, 208). On suburban trains in Bombay, a blind person accompanied by an escort pays only $1\frac{1}{2}$ times the season ticket fare, if appropriate documentation of blindness is submitted. Concessions are also made on bus fares; the city transportation service of Ahmedabad and of Poona provide such concessions, and the Maharashtra State Transport charges half the regular fare for blind persons who travel regularly on the buses (116). The airlines have now followed suit with the Indian Air Lines announcing in May 1965 some special concessions in ticket prices and service for the blind.

A study of the development of mobility in the blind has been conducted by a staff of four paramedical workers headed by a

woman social worker at the All India Institute of Medical Sciences, who first blindfolded themselves to investigate the procedures to be followed. They serve as a mobile team unit concentrating their efforts in village areas where the plight of the blind is most serious; they are currently training blind residents in three villages near the capital, as well as persons from some boys' schools and from a few voluntary institutions such as the Blind Welfare Society and the Blind Relief Association. To date, 120 blind children and adults have been trained. The next step will be to extend this training to schools for blind girls in the capital (48).

Special training is now given the blind in the use of the white cane as a substitute for the traditional long staff with which a blind man formerly tapped his way along the street. There is no program for the training of seeing-eye dogs in India; it is as yet impractical in this country because of factors such as the "undisciplined traffic, the problem of stray dogs and the high cost of training guide dogs" (8).

A campaign was launched in 1968 by the Mylapore Academy in Madras to supply the blind with white canes, with support from the Madras Lions Club that had distributed 250 white canes in the previous three years. An attempt is being made in this way to enable the blind to benefit from a universally recognized symbol as in western countries (477).

The Lions Clubs not only manufacture, distribute, and publicize the use of white canes, but also run an eye bank to provide free medical and surgical treatment of eye complaints. Loans without interest may be obtained from the Blind Men's Association in Bombay for such things as medical treatment, marriage expenses, and the setting up of small businesses. This association also runs a children's recreational center at Bal-Bhavan, which includes among its services a small Braille library for children.

Improvement in the services provided for the blind in India may result from a number of research projects subsidized by Social and Rehabilitation service of the U. S. Department of

Health, Education, and Welfare. The category of "visual defects" accounted for the largest single frequency of such grants listed as new or continuing grants from this agency in 1969, as follows:

Ramakrishna Mission Ashrama, West Bengal. To investigate training and placement techniques for rehabilitating blind persons into competitive employment.

National Society for the Prevention of Blindness; All-India Institute of Medical Sciences, New Delhi. To develop and evaluate a program for early detection of visual defects.

National Association for the Blind, Fort, Bombay. To investigate rehabilitation workshop methods which will foster the absorption of blind workers into open competitive employment.

Tata Agricultural and Rural Training Center for the Blind, Fort, Bombay. To develop methods of rehabilitating the blind as farmers and handicraft workers and resettling them in the villages of India.

Christian Medical College & Brown Memorial Hospital, Ludhiana, Punjab. To establish a research and demonstration project including the operation of a mobile ophthalmological unit to provide intensive ophthalmological and other rehabilitation services to people with serious sight impairments.

Madurai Medical College, Madurai, South India. To establish a pilot demonstration rehabilitation center for the blind, including an optical aids evaluation unit.

School for the Blind, Poonamallee, Madras. To investigate methods for rehabilitating blind people for employment in "Industrial Estates" in South India.

Blind Relief Association, New Delhi. To establish a technical training center and sub-contract workshop for the blind.

Institute of Postgraduate Medical Education and Research, Chandigarh. To establish a pilot rehabilitation center including a mobile ophthalmological unit for persons disabled by eye disorders.

The Blind Boys' Academy, West Bengal. An investigation of training techniques to help rehabilitate blind people in industry and agriculture in Indian conditions, follow-up and evaluation of the resettlement and rehabilitation program (yet to be approved by the Government of India).

The social, psychological, and vocational problems of the blind in India are much the same as in other countries, but the services needed in solving their problems are available to relatively few. Most of the blind in India do not marry. Some of the blind who have no family members to look after them use the help of sighted children who lead them about, children who themselves are uncared for and destitute, and who share what little food the blind person obtains. Most of the blind become professional beggars. Some may be employed by entrepreneurs as beggars, receiving only their food, with the profits going to the organizer (422).

While the problem of making adequate provisions for the blind remains a serious one in India, the progress that has already been achieved in the face of competing demands made by other pressing social problems gives much hope for the future. Educators and welfare workers concerned with the blind are well aware of the changes and improvements that need to be made in existing services, and have set in motion a program based on these long-range goals.

Chapter 7

THE DEAF

Accurate figures concerning the number of deaf persons in India are not available, but it is estimated that they total about 2,000,000 (332). Of these, about 400,000 are children of school age, though only 4,000 or 1% of them are actually enrolled in school (2). There is need for an accurate census of the number of deaf children for whom school places should be provided; the total is estimated to be 20,000 in Maharashtra State alone (347).

The first effort to provide systematic education for the deaf was made by the Roman Catholic Mission in Bombay in 1883. Next appeared the Calcutta Deaf and Dumb School in 1893, and an institution for the deaf in Palamcottah in South India in 1896 (214). In April 1967 the Ministry of Education of the central government reported that there were then about 70 schools for deaf children, in each of which the local language is the medium of instruction. (Other estimates have ranged from 65 to 85). Most of these schools provide primary education combined with prevocational training in light industry and other occupations (347). Most are private, and partially subsidized by state governments. In general the deaf are believed to have received less attention than the blind (370).

The nature and degree of the hearing losses of those accepted in various institutions is usually not indicated, although it appears that chiefly the more severe degrees of hearing handicaps are represented. Partially hearing children have not been differentiated

from those called deaf since assessment procedures have not yet been sufficiently refined and widely applied. The term "deaf and dumb" persists in the names of institutions, in popular usage, and even to some extent in the conversation and reports of workers in the field, in spite of increased emphasis on the teaching of speech. Many of the institutions still include both the blind and the deaf, though recent lists indicate a gradual reduction in their number.

The needs and problems of the deaf were considered at the United Nations Conference of Experts on Physically Handicapped Children for Countries in South East Asia, held in Jamshedpur in December 1950. This was the first conference of this kind either in India or in Asia as a whole. Similar topics were discussed in 1953 by an Expert Committee on Deafness appointed by the central government of India, which included medical personnel and persons specializing in the education and welfare of the deaf. A government-sponsored seminar at Mussorie in 1955 discussed a wide range of problems affecting the deaf in India. In that same year the Government of India established the National Advisory Council for the Education of the Handicapped whose purpose was to assist and advise voluntary societies and state governments concerning the education and welfare of the blind, deaf, physically handicapped, and mentally retarded (214).

For the 100,000 deaf persons in Gujarat there are twelve institutions, of which ten are operated by voluntary organizations and two by the state government. The oldest school of its kind in the state is the School for Deaf-Mutes at Navrangpura, which was started in 1908 by the father of a deaf child in his own home, with only two pupils. By 1961 there had been added to this school a sheltered workshop for the adult deaf above 18 years of age, 28 being admitted during 1965-66 and given hostel facilities and a stipend. Also added was a training college for teachers of the deaf, admitting only teachers of the deaf, which had ten trainees during 1965-66, who paid no fees and received a stipend (75).

The state of Maharashtra has the best statistics of any individual state concerning services for deaf and deaf-mute persons. The number of such persons identified in the Bombay Random Sample Survey in 1957 led to the conclusion that special efforts to educate, train, and employ them were warranted (57). There were ten schools for deaf children, three of them residential, in Maharashtra State in 1967. Two were government schools and eight voluntary schools aided by the government, out of a total of 18 institutions (two government and 16 voluntary) offering services for about 700 deaf children (347). These included the following:

Bombay Deaf and Dumb Society, dating from 1944, has started a recreation club for the deaf, and is also trying to establish an adjustment center for the adult deaf.

Government School for the Deaf, Akola, a residential school for 54 children, accepts some day pupils. Children 10 to 14 years old obtain primary education and pre-vocational training in carpentry, tailoring, and weaving.

Government School for the Deaf, Alibag, Kolaba, has 25 residential pupils and a few day pupils. As in the Akola school, instruction is in Marathi, and trained teachers of the deaf are employed. Children three to eight years old are enrolled in a nursery and Grades I and II (349).

Bombay Institution for the Deaf-Mute, founded in 1883, has both day and residential pupils, teaches in Marathi, Gujarati, and English, and gives instruction in tailoring and carpentry.

The Education, Audiology, and Research Centre, Bombay, a recently established center, has a well trained staff and modern equipment, and is located in a wing of a public elementary school. There are plans for a separate building, though close liaison will be maintained with the regular school.

Vidyalaya School, Poona, is a well equipped school with day pupils in the majority.

The Model Deaf and Dumb Children's School and Home, Sholapur, is a residential school admitting court-committed children (38 children, eight to 16 years of age) for education up to the sixth primary class (347).

Four other day schools for deaf children are subsidized by the state government. The Bombay Institution for Deaf and Mutes has a staff which includes the principal, nine full-time teachers, five part-time arts and crafts instructors, and one physical education instructor. Of the 138 enrolled in April 1967, 98 were boys and 40 girls; 75 were of the Hindu faith, 37 Muslim, and 26 Christian. Most were day students; for lack of space only 20 boys whose parents lived outside Bombay could be accommodated as residents. Ages ranged from six to 18. Though the monthly tuition is only five rupees, 12 students were paying no tuition and five only half. The low costs are made possible by subsidies from the state government of Maharashtra and the Greater Bombay Municipal Corporation, and by donations from various organizations and individuals. Instruction is given in the local languages of Marathi and Gujarati as well as English (40, 37, and 61 being taught in these languages respectively). The oral system is used, but since the school is still labelled "Deaf and Dumb" and since the limited auditory apparatus is not functioning frequently, there is some question as to just how much usable speech is learned. The crafts taught include: embroidery and needlework; drawing, painting, and clay-modeling; carpentry and fretwork; and cutting and tailoring. There is a recreation room and gymnasium, and equipment for a variety of sports. Weekly films, dramatics, excursions, and craft exhibits are also part of the program. Regular medical examinations and care are provided by the resident physician, who has been associated with the institution for many years. The school is inspected by the Inspector of Schools for the Physically Handicapped, who is attached to the Office of the Director of Social Welfare, Maharashtra State, Poona. When the youngsters leave the school at the age of 18, the school helps the parents to find

employment for them or assists the young people in obtaining apprenticeships. The Director of the Special Employment Exchange for the Disabled in Bombay may also give assistance. Some students work eventually as artists, mechanics, and packers.

The Government Lady Noyce School for the Deaf and Dumb in New Delhi is the only one of its kind in the state of Delhi, and the largest in India. It was founded in 1931 by Mr. Bhattacharji, who served as the first principal of the school. Lady Noyce took an active part in founding the school and raising funds for it. Officially described as an institution for secondary education for the deaf and dumb of India, the school has a program whose aim is said to be mental development and socialization, including vocational training (185). In April 1967 this school had a total enrollment of 437 pupils, of whom 235 were girls. Of this total, 64 boys and 42 girls (altogether 106 or one-quarter of the school enrollment) were residents, although another source indicated that in that same year 120 boys and 52 girls were residential students. A double session provides for girls in the morning and boys in the afternoon. Deaf-mute pupils are admitted between the ages of four and eight, and usually take nine years to complete the program prescribed by the education authorities for the fifth class, the upper age limit being 18. A psychological performance test is given at the time of admission to determine intelligence, since the mentally retarded are not included. Auditory equipment is used, and lip-reading taught, but since only a few students have individual hearing aids, which have been purchased by the parents themselves, the extent of emphasis on oral speech is not clear. In the first four years the curriculum, which is taught only in Hindi, includes language writing, simple arithmetic, social science, geography, and drawing, plus some craft work such as carpentry, tailoring, hosiery making, and weaving. Ten students in 1967 were receiving training in the Art Department at Delhi Polytechnic. Tuition is free for all, and for residential students the cost of room and board is adjusted to parental income, some receiving food and lodging free (460). Some school buses are used, though transportation is not promised for all, and the fee for this service varies according to family income (185).

The principal of the Lady Noyce School for ~~the~~ Deaf and Dumb, in an experimental program, tested 83 youngsters with an audiometer (407). The pupils were then classified as follows:

Slightly hard of hearing	Average loss up to	20 db.	0
Hard of hearing	" " " "	40 db.	0
Severely hard of hearing	" " " "	60 db.	1
Deaf	" " " "	80 db.	14
Profoundly deaf	" " " "	90 db.	9
Deaf with non-usable sound perception	" " " "	100 db.	59
Total			83

These data indicate that more severe hearing losses were to be found in the Lady Noyce School than in the Clarke School for the Deaf or the Lexington School for the Deaf in the U.S.A. There was a total of 18% of the pupils with hearing loss up to 80 decibels, as compared with 41% for the Lexington School and 30% for the Clarke School, and 82% above 80 decibels, versus 59% for Lexington and 70% for Clarke.

Only within the last few years have there been facilities for training deaf children between the ages of three and eight. The only school other than the Alibag school that accepts children in this age range is the voluntary Education, Audiology, and Research Centre in Bombay, a day school for 40 children in that age group. An excellent program of research, teaching, and supplementary services is provided by this center and also by the Stephen School for the Deaf operated in Bombay by the National Society for the Deaf. In general, however, very little has yet been done for the pre-school child with sensory handicaps. A pilot project which began to function in December 1962 points to the need for early detection and assistance. The state and central governments are collaborating in the support of a nursery for blind and deaf-mute children, four to five years old, attached to the School for Deaf-Mutes in Ahmedabad. This nursery, said to be the only one of its kind in India, gives help in communication skills, sensory learning, and social adjustment to these young children during their stay of two or three years (114).

Many of the schools are reported to have serious shortcomings. Although the oral method is stressed, many institutions still use the sign language (347), which may be related to the practical problems of too few trained teachers, a shortage of auditory equipment, and the difficulties encountered in obtaining replacement parts or repairs for this equipment (488). Teaching aids are often inadequate, as are the recreational and sports facilities. The vocational training is in many instances ineffective and unrealistic (348). Even when funds for special services are available, shortage of trained personnel may prevent programs from being started. An audiological clinic and an itinerant home teacher program for parents of young deaf children are planned by the central government when staff becomes available (187).

A shortage of adequately trained special teachers for deaf children is due in part to the fact that the teacher-training programs for them have been developed fairly recently. Although the oldest teacher-training course is that of the Calcutta Deaf and Dumb School, which was started in 1887, the first training college for teachers of the deaf was established in Lucknow in 1948. Five years later the college curriculum was reorganized by a committee headed by the Director of Teacher Training Colleges in Uttar Pradesh and composed of teachers who had received advanced preparation outside of India in the education of the deaf. Other programs at present are those at the Palayamkottai School for the Deaf, Lady Noyce School for the Deaf and Dumb in New Delhi, the Government School for the Deaf in Hyderabad, and the Ahmedabad Deaf and Dumb School (214).

Between 50 and 60 persons complete the teacher-training programs each year, but the number varies because some of the programs are not offered every year. For example, the program provided at the Lady Noyce School for the Deaf and Dumb in New Delhi is given only when there are enough candidates to justify offering it (185). Some experts maintain that the best teacher-training program is the diploma course offered in Bombay by the Commonwealth Deaf Society, though it appears to be difficult to attract young people to this program (348).

A new training program is being organized by the Central Society for the Education of the Deaf, which received its charter in 1966. Among its purposes was the establishment and operation of a central institute comprising one or more schools for the deaf, colleges for training teachers of the deaf, centers for research relating to the causes and prevention of deafness and methods of educating the deaf, clinics to assist and advise the deaf and their parents, and bureaus for assisting the deaf to obtain employment. This central institute was to be named the Central Institute of Teachers of the Deaf. A detailed syllabus was prepared describing the program for teacher-training in this institute (69).

Little has been done so far for the speech-handicapped as a separate group, and the specialized needs of the deaf in the development of speech have received only limited attention. However, a hopeful report concerning related projects supported by the U.S. government has been given by a speech professor from the University of Massachusetts who went to India for three months in late 1967 and early 1968 under the auspices of Social and Rehabilitation Service of the U.S. Department of Health, Education, and Welfare to act as a consultant on speech problems in the SRS-supported research project at the All India Institute of Medical Sciences in New Delhi (169). Research into communication disorders is also supported by SRS grants in Bombay, Mysore, and Vellore.

The All India Institute of Medical Sciences, with a medical school sponsored by the central government, has set up a program with three major components:

1. clinical services for speech and hearing handicapped persons;
2. research studies in communication problems; and
3. training of personnel in speech and hearing rehabilitation.

The Institute offers speech and hearing services for both children and adults with problems such as cleft palate, cerebral palsy, aphasia, post-laryngectomy, hearing loss, voice disorders,

stuttering, delayed speech, and articulation defects, thus including a wide range of both organic and functional disorders.

Since there are few trained speech and hearing specialists in India, three speech clinicians from the allied fields of nursing and education of the deaf are being given on-the-job training. This training includes demonstration teaching by visiting speech pathologists. The staff includes three otolaryngologists (one self-trained in the field of audiology), a psychologist, a linguist, a teacher of the deaf, an electronics engineer, and audiometric technician students.

In the tradition of the Indian educational system, staff members are encouraged to do independent study of professional literature as a basis for possible clinical application with patients they are serving (169).

New patients and those for whom discharge or program modifications are being considered are presented to the entire staff for recommendations. As needed, weekly individual or group therapy periods are arranged. Patients and their families may live temporarily in New Delhi for brief, intensive periods of therapy with sessions two or three times a week. The professional team also provides services in family counselling and home practice, including specific techniques and practice materials to be used at home, and a re-evaluation of each patient at three-month intervals. Consultation is available from the various departments of the medical school, such as psychiatry, plastic surgery, and radiology. The liaison person is the staff speech clinician in the Physical Medicine and Rehabilitation Unit (also supported by SRS). The electronics engineer is an important member of the team since it may take from six months to two years to order new equipment or repair parts from abroad. Research projects by individual staff members are carried on continuously. The project includes a two-year audiometric technician course plus on-the-job training for speech clinicians, and proposals for a curriculum in speech pathology and audiology are being discussed for the future.

Family interest and patient motivation were strong, for some had previously gone to unqualified persons who in a few instances

had performed surgery for common speech problems. New materials and equipment are becoming available as in the case of electronic larynxes now supplied in a cooperative program by the World Health Organization and the Western Electric Company of New York.

Such research programs have raised many questions for which the answers have not yet been determined. In the face of India's need, should there be initial concentration on high-level teaching and demonstration, or early emphasis on training at the technician level? What kinds of modifications of qualification standards may be needed to meet the needs of India's huge rural population? How can trainees be recruited, and what kind of prerequisites should they have? How can Indian personnel best be prepared to serve as teachers in these new training programs, and what kind of cooperation with consultants from other countries would be most effective? The very statement of these questions and the opening up of discussions to provide answers for them is an important step in the direction of achieving a broader and more effective program of services (169).

Research concerning speech and hearing problems is also being conducted by the Deafness Research Project set up at the Christian Medical College and Hospital in Vellore in 1962, in collaboration with the John Hopkins Hospital in Baltimore and with support from the National Institutes of Health in the U.S.A. (212, 213). The purposes of this project are: (1) to determine the incidence of hearing loss in the general population; (2) to identify the diseases causing hearing loss, with emphasis on the role of common infections, tropical diseases, and nutritional deficiencies; (3) to develop valid hearing-test procedures and apply these to a selected group for the establishment of norms; and (4) to obtain materials for pathological medical analysis, such as temporal bones and the brains of deceased persons from an experimental group. In 1963 a hearing survey was made of 857 children five to 15 years of age in three schools in the Vellore area. The prevalence of hearing loss in these children ranged from 16.3% to 18.6%, a high rate as compared with the 2%-to-8% range found in more highly developed countries.

On the basis of a Ministry of Education figure of 89,602,000 school children in India, this prevalence rate would indicate that more than 14,580,000 children five to 14 years of age inclusive, have a hearing loss needing treatment, in addition to probably millions more above that age level. There was a relatively high proportion of conductive hearing loss among the children tested — between 90% and 97% — with the highest frequency found among the eight-year-olds. Of those with this kind of hearing loss, between 70% and 80% had abnormal otological conditions, with acute and chronic otitis media and secretory otitis media in most cases. Sensorineural hearing loss was very low in incidence — between 0.38% and 1.63%. However, it was suspected that this low rate was due to the fact that children with a serious hearing loss of this type were usually kept at home and not sent to school. Such data emphasize the magnitude of the problem and the fact that with proper early treatment most of the children could have regained their hearing.

At present two other studies are under way to determine the diseases responsible for hearing loss. In one investigation a carefully selected group of 1,000 school children has been studied for six years. In another continuing project, all patients admitted to the hospital who have the common infectious and tropical diseases and nutritional deficiencies are observed to note the effect of these conditions on their hearing. When such patients with hearing loss die, their temporal bones and brains are studied in order to correlate the clinical and otological data. Tentative findings from these studies indicate that there was no case of sensorineural hearing loss, and that there was a high incidence of conductive hearing loss associated with mumps, measles, chicken pox, and Vitamin B deficiency.

As the work of the Deafness Research Project continued, an increasing number of persons came to the center for assessment, treatment, and rehabilitation, although the center was equipped only for research and not for treatment or rehabilitation. In general there are no speech or hearing clinics in India for assessment and guidance as to suitable treatment. Even in some medical centers where medical and surgical treatment is given, no educational or vocational services are provided for

the patients. Many physicians do not recognize the importance of early detection and general rehabilitation. As a result, partially hearing persons may be attending schools for the deaf, and adult vocational needs are neglected. There is in general a lack of both professional and lay knowledge as to what can and should be done for those with impaired hearing (212).

A further research project was initiated at the Christian Medical College in March, 1966, with SRS support to: (1) develop hearing and speech test procedures based on Indian languages, a beginning having been made in the Tamil language; (2) develop comprehensive medical, audiological, and counselling services for patients and parents in terms of local conditions; (3) explore the possibilities of manufacturing hearing aids through local industries and materials since hearing aids are still too expensive for most people; (4) establish a program of community education and guidance concerning speech and hearing problems; and (5) discover ways of expanding employment opportunities and demonstrate to employers the capacities of those with speech or hearing limitations.

Limitations in technical equipment were indicated in a 1966 nation-wide questionnaire survey responded to by 69 of 82 teaching hospitals. Nine hospitals had no audiometric equipment and 25 had audiometers that were not in working condition, since all audiometers and repair parts had to be imported. Only eight hospitals had equipment for speech therapy. It was reported that in the entire country there were only four trained audiologists and eight speech therapists (212).

A discussion of ways to meet the needs revealed by this study was held at two All India Workshops on Speech and Hearing Problems held in 1966 and 1967. Plans were drawn up for training programs for specialized personnel on the undergraduate level. The need for Indian production of low-cost and easily repaired hearing aids and audiometers was emphasized, and the Bharat Electronics Company in Bangalore was urged to resume the manufacture of audiometers, which had been discontinued in 1962

because of defense needs. Specifications were drawn up for the manufacture of hearing aids, and the establishment of speech and hearing centers in all the teaching hospitals in the country was recommended. Progress reported in 1967 included: (1) the opening of three centers for training speech and hearing personnel at the B.Y.L. Nair Charitable Hospital in Bombay, the All India Institute for Speech and Hearing in Mysore (associated with the Christian Medical College and Hospital in Vellore), and the All India Institute of Medical Sciences in New Delhi; (2) agreement for the manufacture of 100 audiometers by April, 1968, with other audiometers ready for delivery in the summer, and for experimentation looking toward the manufacture of other equipment; (3) the setting up of a Panel on Hearing Aids by the Indian Standards Institute to draft specifications for hearing aids to be manufactured in India, and an actual start of manufacture on the basis of these specifications.

A rising interest in the areas of speech and hearing has resulted from these efforts. It is reported that Departments of Otolaryngology in some medical schools are developing attached speech and hearing centers, and that courses in audiology and speech pathology are being added to graduate programs. The Indian Speech and Hearing Association was formed, and held its first annual conference in Calcutta in May 1968 (212, 213). A third workshop held in Vellore in January, 1969, continued the work of the earlier workshops.

The first speech therapy clinic was established at the B.Y.L. Nair Charitable Hospital in Bombay in January, 1963, under the guidance and medical supervision of the Department of Otolaryngology, and by the middle of 1966 two schools for the training of audiologists and speech pathologists were established in Bombay and Mysore respectively.

The Audiology and Speech Therapy School at the Bombay hospital was made possible by philanthropic aid and a grant from the Municipal Corporation. A two-year course, followed by a four-month internship, leads to a B.Sc. degree. Ten students are admitted annually who have qualified by taking an inter-

disciplinary science program in physics, chemistry, and biology at the University of Bombay or at any other university in India recognized by this institution. The staff includes two persons with master's degrees in speech pathology and audiology (312, 337).

In Mysore the school resulted from cooperation of the All India Institute of Speech and Hearing with the central government Ministry of Health and the local Maharaja, who donated the land for the school. Lectures in audiology and speech pathology are now incorporated into the training programs for students in pediatrics and otolaryngology as well. In addition to its undergraduate program, the Mysore school started a master's level program in 1966, and admits about 32 students to the two programs yearly. Both the Bombay and Mysore schools face the continuing unmet need for the electro-acoustical equipment essential for teaching and research (337).

It is expected that from 1970 on, there will be a steady output of therapists from these centers. Meanwhile, the need for such specialized services is being met through short-term programs such as an eight-week Seminar conducted in 1968 by the B. M. Institute in Ahmedabad in collaboration with the Directorate of Health and Medical Services in the state of Gujarat (316).

Speech and hearing therapy and related services are complicated by the multilingual problem in India. This necessitates the translation of materials for parents and families into several major languages, as is now being done into Hindi and English at the All India Institute of Medical Sciences. It will also be necessary to make a phonetic analysis of the major languages in order to adapt tests of articulation and auditory discrimination. A clinical psychologist at the B. M. Institute in Ahmedabad has pointed out that as yet there are few tests suitable for use with preschool-age children brought in for consultation concerning their faulty speech development. The most widely used test is now the Gesell, for which norms for Indian children are being established by the Indian Council for Educational Research and Training. Stand-

ardized tests with age norms are also needed for school-age children, and in their absence the psychological must use his or her ingenuity in assessing information derived from a variety of sources (417).

An example of efforts to modify western tests for use in India is that of an adaptation of the Wechsler Intelligence Scale described by the Rev. A. J. Malin, Director of the Nagpur Child Guidance Centre Mental Retardation Clinic at De Sales' College Psychological Test and Guidance Institute. Since English seems still to be the only language that is known throughout India, it was decided to adapt WISC for English-speaking children, trying to make it as culture-free as possible so that it could easily be translated into 14 major regional languages (246). Since radical revisions were necessary to eliminate cultural bias, the test was renamed the Intelligence Scale for Indian Children (ISIC).

The needs of the hard of hearing, an even larger group than the deaf, will also be taken into account in future developments. The first meeting of the reconstituted National Advisory Council for the Education of the Handicapped was held in New Delhi in the summer of 1968 to discuss plans. At this meeting Dr. Guha, Union Minister of State for Social Welfare, indicated that the central government was planning to set up a school for the partially deaf as an integral part of the National Centre for the Adult Deaf in Hyderabad (476).

Meanwhile there is increasing awareness of the special problems of the deaf and hard of hearing which may lead to lack of concentration or attention in school, withdrawal from social contacts, fear and anxiety in what seems a threatening world, or rebellion and aggression (498). These and other problems must be faced as a basis for an eventual experimental effort to incorporate such youngsters into regular schools as is now being attempted with the blind.

The vocational needs of the deaf are being met through expanded offerings in vocational training in the institutions for this group. Both the deaf and the blind have traditionally been

trained in crafts whose products had little or no market value, since the purpose was to keep them occupied rather than to make them economically independent. Hand-spinning and weaving were common crafts for both groups, and music for the blind. There has recently been a shift of emphasis to training them for regular employment, which is the primary aim of the government Training Centre for Adult Deaf in Hyderabad, founded in 1962. The Lady Noyce School for the Deaf and Dumb in New Delhi has a small section for vocational training for children and adolescents. Recently a Vocational Rehabilitation Training Centre for the Deaf was established at Allahabad (Uttar Pradesh), and another adult training center is under consideration for the Bombay area (332).

But there is still too little opportunity for the adult deaf to obtain technical and vocational training. The School of Photography run by the All India Federation of the Deaf and the central government's training center for the adult deaf at Hyderabad represent efforts to provide opportunities in open employment. More varied vocational training, acceptance in normal school situations, and more adequate vocational assessment and guidance are essential next steps. The deaf adolescent of 17 or 18, when suddenly detached from a sympathetic and protective institutional environment, finds the transition to the hearing world very difficult. It is proposed that the state of Maharashtra establish a vocational adjustment center to provide for both vocational training and social adjustment for the deaf (348).

The Training Centre for the Adult Deaf at Hyderabad was established by the Government of India during the year 1962-63, to provide training in crafts and engineering and industrial occupations for the adult deaf, starting with 30 men and when fully developed to have 120 trainees. Until its own buildings are constructed, the center will remain next to the Government School for the Deaf in Malakpet. The deaf are defined as those in whom the sense of hearing is non-functional for the ordinary purposes of life; this would normally mean a loss of 70 decibels or above by air conduction in the better ear. Other requirements

for admission are: (1) no major handicap other than deafness; and (2) age between 16 and 25 years, possibly up to 30 years in unusual cases. Those who have lost their hearing recently should have lost it for more than three years prior to the date of admission, should have been attending an educational institution or been employed, and should have a certificate showing the nature of educational achievement or employment. Candidates who lost their hearing in childhood or many years ago should have attended an institution for the deaf for at least five years, and have evidence of educational achievement. Priority is given to those who became deaf more recently, to persons with deafness connected with military service, to civilian government personnel, and to those recommended by organizations planning to employ the trainee after his period of training is completed. In addition, 20% of the places are reserved annually for candidates belonging to the "Scheduled Castes" and the "Scheduled Tribes."

The training programs, each of which lasts two years, were organized and added in the following sequence:

1962-63	1963-64	1964-65	1965-66
Sheet metal work Wiremanship Fitting	Welding Painting	Turning Machinist	Instrument mechanics Manufacture of radio components

Emphasis is on practical training, with theoretical instruction given only to the extent made necessary by the subject matter. Fees are paid only by those whose parents have an income exceeding 500 rupees a month. Some recreational activities, physical education, and medical care are provided. Follow-up is to be undertaken by the Director, and the trainee is supposed to send quarterly reports for at least a two-year period after he leaves, indicating details of the work he undertakes.

The Vocational Training Centre for the Deaf at Allahabad, Uttar Pradesh, is a state demonstration project and training program set up in 1966 "to meet the challenge of 12,027 'workable' and 'educable' deaf." Open to young men and women 14 to 21 years of age from the Hindi-speaking area, it helps to fill a gap in services for this particular adolescent age group:

They are treated as worthless and looked down upon by the society as unproductive, inferior, and dependent, isolated and like beggars (270).

Trainees in this center may choose among the trades of agriculture, carpentry, composing and printing press work, light machine repairs, smithy and metal work, leather work, tailoring and home economics, dyeing and printing. Between 50 and 60 persons are trained each year. Such training helps to meet the needs of the young deaf person as indicated by a study of 291 deaf persons which revealed that they generally lack knowledge of occupations and work possibilities (270).

In the Delhi area their needs may in the future be met in part by a residential training center being planned for that locality by the All India Federation of the Deaf.*

In 1958, in spite of India's problems of wide-scale unemployment and underemployment, pilot employment offices for placing trained blind, deaf, or orthopedically handicapped persons in suitable jobs were established. The first of these, organized in Bombay in March 1959, registered 548 physically handicapped applicants between the date of its opening and December 1961; of these registrants, 91 were deaf, and most of them congenitally deaf (221).

Placement of Deaf Applicants by Bombay Exchange between March 1959 and December 1961

<i>Type of Industry</i>	<i>No. Placed</i>	<i>Some Illustrative Operations</i>
General engineering and metals	11	Bench fitting, pattern making, power press operating, machine drilling, core making, operating fluted roller making machine.
Electrical engineering and radio manufacturing	13	Fitting, drilling, switchgear assembling, transformer winding, coil winding, assembly of radio components, soldering, spray painting.

*Letter from Mr. D. K. Nandy, General Secretary of the Federation, May 17, 1969.

Chemicals and pharmaceuticals	13	Suture winding, finishing tooth brushes, attending filling machines, packing, stamping, labeling, carton making.
Rubber, plastic, and glass	8	Moulding rubber goods, table blowing (glass), operating braiding machines, cutting and finishing rubber and plastic goods, inspecting defects, operating plastic extruding machine.
Textiles	2	Stitching and joining cloth pieces.
Printing and advertising	5	Commercial artist, operating printing machines.
Government departments	2	Typing, counting, and folding envelopes.
Miscellaneous	1	Ironing garments.
<hr/>		
Total	55	

Of the 55 placed, 29 were placed in work requiring primarily repetitive operations, while 26 were placed in more highly skilled operations.

In that period 178 out of 548 handicapped applicants were placed, with a higher percentage of the deaf placed (60% or 55 out of 91) versus 15% of the blind (19 out of 124) and 31% of the orthopedically handicapped (104 out of 333). All the deaf were placed in open employment with wages equal to those of normal workers. The 1967 government publication

"Toward a Fuller Life" reported that of the 55 deaf persons placed by the end of 1961, 39 still had the same jobs, eight had been dismissed because of shortage of work or closure of the place of business, five had resigned because they disliked their duties or the terms offered, and only three had been discharged because of unsatisfactory work performance or general adjustment. A survey of employer opinions revealed that in only one case was the work performance of the deaf person lower than that of a person with normal hearing. The experience of the special exchanges indicates that the work performance of the deaf is generally superior to that of the blind and orthopedically handicapped person placed by the bureaus.

The Delhi employment exchange in the same period registered 26 deaf applicants and placed 10 of them in work such as hand-knitting, machine operating, tailoring, carpentry, painting, welding, and art work. It was reported that most of these persons were adjusting satisfactorily to their employment situations (221). Similar data may be provided by a project undertaken by the Uttar Pradesh Deaf and Dumb Institute in Allahabad, which with SRS support is investigating techniques for rehabilitating deaf persons by means of vocational guidance, training in indigenous crafts and other trades, and selective placement. No statistics are available concerning the placement of the deaf by various voluntary organizations devoted to their welfare, but it is believed that the number of successful placements is limited because of lack of effective follow-up service (221).

Negative attitudes of employers and co-workers continue to provide obstacles. Employers' resistance is based on factors such as ignorance of the industrial potential of deaf workers, a generalized prejudice against hiring them, and concern about their accident proneness. Co-workers may be jealous if the deaf show a higher level of performance, and misunderstandings may arise because of ineffective communication (221).

Since an employer judges an applicant's intelligence and competence from the replies he gives, the employer tends to reject

the deaf applicant who cannot give quick and intelligible answers. Employers also worry as to whether deaf workers can take care of themselves in a factory where there are moving vehicles and moving machinery and where they would lack the auditory cues to detect their position (364).

Another basic problem of the deaf is that of finding a suitable marriage partner and maintaining a home and family of their own. Marriage counselling is especially important for the deaf. Since the marriage of closely related deaf persons produces a higher percentage of deaf children than any other combination in deaf marriages, it is considered advantageous that the Hindu Code of Marriage in India strictly prohibits consanguinous marriage (164).

In achieving improvements in provisions for the deaf, an important role will continue to be played by voluntary organizations. An example is the Society for the Deaf in Calcutta, which provides services such as social welfare, a library, sales of handicrafts, sports and recreation, an adult education center, and general assistance and guidance, as well as a school for deaf children called "The Ideal School for the Deaf." In August 1967 this society held its second Annual Arts and Crafts Exhibition of the Deaf, and in February 1968 it held its Annual Sports for the Deaf program (314).

A sales center for products of deaf workers, called "Mook Preeti," was inaugurated in 1969 in New Delhi. This was the first cooperative sales center of its kind in India, owned and staffed and managed entirely by the members of the Deaf and Dumb Association, who are putting on sale their paintings, clothing products, and other articles (171).

Many suggestions have been given concerning the improvement of existing services. In fact, much more has been written about what *should* be done than about what *is* being done.

1. *Means for the collection of more accurate statistics* concerning the incidence of the deaf, as a basis for planning services. Very few well organized efforts of this kind have been made

so far, as shown by wide variation in estimates of the numbers needing special services. This would imply more precise definitions and classifications of deafness.

2. *Study of existing services by a special committee* as a basis for determining guidelines for the future development of programs (347, 348). The dissemination of information about what is being done at present all over India, or even within a particular state, would be helpful in making comparative evaluations of current procedures and provisions, and attempting to improve them. Lack of communication among workers in the field is characteristic of many areas of social service.

3. *Means for the early identification of deaf children.* Both parents and teachers need instruction to enable them to detect deafness as early as possible (347). There is need for local-authority provision of a complete examination, including audiometry, for deaf children of both school and pre-school age, along with the urging of mothers to test their children for deafness from the first month of the child's life. Diagnostic units need to be set up in various parts of the country to assess deaf children with more than a single perfunctory out-patient examination (255).

4. *More modern equipment and facilities in the schools for the deaf.* Very few children in such schools in India have ever had their hearing tested with a pure-tone audiometer. The only exception appears to be the Government Lady Noyce School for the Deaf in New Delhi. Yet even here this has been done outside regular working hours. Because of this it will take two years to complete the testing of the younger students who are more difficult to test and who require more time. Even in schools where there are wearable hearing aids, these are rarely found being worn (108). Much of this equipment is usually out of repair or needs replacement. Experts believe that many children now considered totally deaf would prove to have some functional hearing if they could be provided with the proper hearing aids and instructed in their use (187).

5. *More residential schools for deaf children with additional handicaps* such as emotional maladjustment or mental retardation, or whose environment is unsatisfactory (255).
6. *Standardization of curriculum and teaching methods used in schools for the deaf*. As yet there is no officially prescribed or recommended program, nor have there been developed any widely approved teaching techniques. The teacher-training programs themselves vary considerably in content and emphasis.
7. *Closer ties between schools for the deaf and regular schools* (348). Mutual benefit could result from such collaboration. It would reduce the current separateness of the deaf and the hearing, and perhaps pave the way more quickly for moves toward integrating the deaf into regular schools. It would also make more apparent the fact that the basic needs of deaf and hearing children are the same.
8. *A greater variety of recreation for the deaf*, especially those forms which would enable the deaf to mingle with the hearing (347). Voluntary associations could organize activities such as sports clubs and social gatherings to serve this purpose.
9. *An increase in the extent and variety of vocational opportunities for the deaf* (187). The limited vocational provisions that now exist often stress a narrow range of skills and increasingly outmoded and traditional crafts rather than industrial operations and professional activities which would give them a wider range of choice in today's world, and which would take into account the diversity of individual differences in aptitude and interest.
10. *Expansion and improvement of training programs for special teachers of the deaf*. A survey of the current status and professional background of those now teaching the deaf could serve as a starting point. More training programs could be established, and qualified persons encouraged to apply for this training.
11. *Special training for welfare officers working with the deaf*. It has been suggested that the government, as part of the pro-

gram of an institute training teachers of the deaf, conduct a course for Welfare Officers to look after the general welfare of the adult deaf, and that the state government appoint a Deaf Welfare Advisor to be in charge of a welfare program for the deaf in the city and state, preferably a deaf person with appropriate experience and aptitudes (255).

12. *Establishment of a number of Speech and Hearing Therapy Centers* (108). Little has been done so far for the speech-handicapped as a separate group, and there has been little specific speech therapy available as part of the oral instruction that is alleged to occur in all schools for the deaf.

13. *Model institutions to be used as pilot projects* (348). Additional experimental programs could demonstrate approved methods and materials, and represent a pooling of the best thinking and experience available concerning education for the deaf.

14. *Establishment of a State Council for the Deaf in each state*. Such a council could coordinate the diverse activities and programs for the deaf within the state. It could also be effective in implementing recommendations for a broader program of parent education by providing information and guidance for the parents of deaf children. A step in this direction was the recent formation of a Council to coordinate the efforts of the various associations for the deaf in Bombay (314).

Although it is evident that considerable expansion and improvement of provisions for the deaf in India will be necessary, the progress that is already being made along these lines gives a hopeful indication of accelerating changes in the future. The brighter prospects of the deaf for a normal life reflect in India as in other countries an increasing awareness of society's responsibility to help every individual, whatever his capacities, to become all that he is capable of becoming.

Chapter 8

THE ORTHOPEDICALLY HANDICAPPED

After services for the blind and the deaf had started to appear, the orthopedically handicapped began to receive attention. This group includes conditions of crippling and neuromuscular disability except for leprosy effects, which are still regarded in India as a separate category.

As with other categories of handicap, there is considerable variation in the estimate of the numbers of the orthopedically handicapped, who are defined as those with defects causing deformity or an interference with normal functions of the bones, muscles, or joints (30). The government surveys in Bombay and Delhi in 1956 and 1957 respectively, produced an estimate that orthopedically handicapped persons constitute approximately 56% of the total population of physically handicapped persons in India (57, 264), and between 30% and 40% of all handicapped persons (211).

The Central Statistical Organization estimates the total number of orthopedically handicapped persons as follows:

1951	..	..	2,730,000
1961	..	..	3,440,000
1971	..	..	4,160,000

The first survey of the orthopedically handicapped in India was made by an Adviser to the United Nations, Dr. Henry Kessler, in Maharashtra State (then Bombay State) in February

1954. The survey was made in the community of Phaltan with a population of about 10,000, and 72 adjacent villages, providing a total of about 100,000 persons. Widespread advance publicity was given to his visit, and parents were urged to bring their crippled children for examination and advice.

Of the 165 persons examined. 95 were children under 16 years of age, in whom the following handicapping conditions were found:

Polio	33
Cerebral palsy	19
Medical conditions	8
Post-encephalitic	7
Arthritis	5
Surgical conditions	4
Deaf	4
Post-fracture deformity	3
Club foot	3
Hydrocephalus	2
Pseudo-muscular-dystrophy	2
Mentally retarded	2
Congenital hip dislocation	1
Volksmann's contracture	1
Blind	1
	—
Total	95

Thus 78 or 82% of the younger group were orthopedically handicapped. Among the 70 persons 16 years of age or older were found these handicaps:

Arthritis	21
Post-fracture deformity	11
Hemiplegia	11
Polio	5
Cerebral palsy	1
Other conditions	21
	—
Total	70

Many other handicapped adults appeared who could not be examined. Advice was given as to where treatment could be secured, and several follow-up visits were also made later to arrange for treatment (325).

The next survey was a limited one made at Surat in Gujarat in July and August 1956 by the local branch of the All India Women's Conference as part of a health survey of children under five years of age. A door-to-door canvass of two wards in the city resulted in the filling out of 1,712 forms concerning handicapped children. Medical examination was arranged for 1,312 of these children. Some of the persons interviewed did not wish to admit that there was a handicapped child in the household. Among the handicapping conditions discovered were 342 cases of rickets (25.3%), 74 otitis media of the ear (5%), 79 with eye diseases (5.6%), seven with paralysis, four who could not walk, and four who could not sit up. The families were given advice concerning the seeking of the necessary treatment.

In 1962 a committee from the Khar (Bombay) branch of the All India Women's Conference, plus a paid part-time worker, visited over 5,000 families, and found among those under 18 years of age, 15 orthopedically handicapped, 10 deaf, 10 deaf-mute, nine mentally retarded, four blind or visually handicapped, and two multiply handicapped, with a total of 39 handicapped youngsters.

The first of the Random Sample Surveys sponsored by the Ministry of Education was made in Bombay by the All India Occupational Therapists' Association. Similar surveys were made by the Delhi School of Social Work for greater Delhi, and at Kanpur under the Director of the Institute of Social Sciences at Agra University.

In the Bombay survey, 346 handicapped persons were found out of 19,000 families representing an estimated total of 95,000 persons, or a ratio of 3.4 per 1000 of the population. The largest group were the orthopedically handicapped, with a rate of 1.36 per 1000:

Orthopedically handicapped	126
Visually handicapped	83
Mentally retarded and mentally ill	55
Deaf	44
Deaf-mute	28
Dumb (only a speech defect)	10
Total	346

In the Delhi survey it was found that 4% of the families had a handicapped member, and 1% of all the families had an orthopedically handicapped member. In the Kanpur survey, 43.5% of the 352 handicapped persons discovered were orthopedically handicapped.

The most intensive study of the orthopedically handicapped that has yet been made in India was an investigation based on questionnaires and interviews involving 500 persons with different kinds of orthopedic handicaps, from different walks of life, and from the three cities of Bombay, Poona, and Ahmedabad (52). Among these 500 cases of permanent orthopedic disabilities, the crippling conditions discovered included traumatic (235 or 47%), neurological (200 or 40%), infective (25 or 5%), congenital (37 or 7.4%), and other orthopedic conditions (3 or 0.6%).

Polio and cerebral palsy cases occurred more frequently in the higher castes, which represent also a higher socioeconomic level. Tuberculosis of the bones and joints and congenital defects were more common in the lower castes, where poor nutrition and poor living conditions are more likely to be found. Accidental injuries and infective conditions occurred more frequently (55% and 64% respectively) in the age group below 34 years than in older people. The younger age group also accounted for 80% of the polio cases (most occurring in children one to five years of age) and 100% of the cerebral palsy cases. Only 18.2% were women, in contrast to the fact that in the three cities studied females comprised an average of 42% of the population. This may be due both to male proneness to certain ailments and dis-

abilities, and also to the greater exposure of most men to hazards in industry and daily life.

Over half the total group studied (55%) had "major" disabilities, 32% "severe," and 13% "minor." Diseases were responsible for 44% of the cases of disability, and accidents for 41%, with only 3% attributable to war injuries. Of these accidents, 20% were blamed by the person on his own absentmindedness, and 54% of all the accidents were road accidents. About 22% of the total were compensated, though this compensation fell far short of meeting the person's needs.

Congenital causes for orthopedic handicaps were common, as in other samples. In the Bombay Random Sample Survey, 17.3% of the total 125 orthopedically handicapped cases were congenital defects, such as club foot and dwarfism. Among the 248 persons applying for government scholarships in one year, 17.7% had congenital defects. Out of a total of 1,268 cases admitted to the Children's Orthopedic Hospital in Bombay in 1956, about 9% were congenital cases, and similarly out of 1,079 cases admitted to the Surgical Department of the Bai Jerbai Wadia Hospital for Children in Bombay in that same year, nearly 10% fell into the congenital category.

According to the Polio Research Unit of the Indian Council of Medical Research, Bombay, the incidence of paralytic polio in the urban population is not more than one per 10,000, with a mortality rate of 10%. In the decade from 1948 to 1958, 1,330 polio cases were registered in Bombay, of which 138 were recorded for 1958. But many cases may go unrecorded since in some cities the reporting of the disease is not mandatory. Unsanitary living conditions and lack of adequate diagnostic and treatment services cause polio, especially among young children, to be a continuing cause of concern. It is somewhat more common in the upper socioeconomic classes than in the lower ones (52), perhaps because children from the advantaged groups have lower infant mortality rates and may not acquire the immunity of the surviving children of the poor.

A growing number of orthopedic handicaps are related to industrialization and urbanization. Industrial accidents are increasing rapidly as the number of industries increases. Although the number of cars is still relatively small (as compared with the U.S. where its 100,000,000 trucks and cars account for the highest number of deaths and severe orthopedic injuries in the age group one to 45 years), safety precautions on the part of pedestrians and drivers have not kept up with increasing traffic.

Unfortunately, our road accidents which are increasing at an alarming rate are mainly due to non-observance of even the elementary rules of the road by the drivers of buses, trucks, taxi cars, private cars, auto-rickshaws, scooters, cycle rickshaws, horse carriages and bullock carts on the one hand and the cyclists and pedestrians on the other (111).

Other orthopedic problems are still more serious than those caused by accidents: chronic infections of bones and joints as in tuberculosis, and acute infections caused by various types of microorganisms. These are directly related to conditions of poverty, illiteracy, gross malnutrition, overcrowding, and unsanitary living situations among the population as a whole. Appropriate treatment for such orthopedic disabilities is difficult to secure in view of the serious shortage of trained medical personnel and the resultant widespread tendency to consult unqualified persons for treatment. Continuous efforts in the direction of public education regarding the nature and necessary treatment for disabling conditions have been made by the National Advisory Council for the Education of the Handicapped in cooperation with the Central Social Welfare Board, state governments, and various voluntary organizations (110).

While exposure and killing of crippled infants was apparently not practiced in ancient India, and giving alms to the crippled was considered to have religious merit as in early Christian practice, compassionate treatment did not include treatment of the crippled as equals.

This exclusion of the crippled from social and religious rites was dictated by the belief in *karma*. It was believed that a person suffered from crippling condition because of his misdeeds either in the present or previous lives. Any act to ameliorate his condition was, therefore, regarded to be against the will of God (51).

The Golden Age of the Guptas (320-480 A.D.) was considered unique in its treatment of the handicapped because in this period workshops were established for the vocational rehabilitation of the physically and socially handicapped. Other sporadic instances of favorable treatment are also found in Indian history. Both Buddhism and Jainism emphasized compassionate regard for the handicapped, and the Muslim rulers in medieval India provided food, shelter, and clothing for their handicapped subjects (51).

Organizations and services for the orthopedically handicapped have appeared in the following sequence:

- 1943: T. K. Polio Clinic and Physiotherapy Institute, Ahmedabad.*
- 1947: Society for the Rehabilitation of Crippled Children, Bombay.
- 1952: Society for the Welfare of Cripples, West Bengal.
- 1955: Fellowship for the Physically Handicapped, Bombay.
- 1955: Occupational Therapy Institute, New Delhi; in 1960 renamed the Institute of Physical Medicine and Rehabilitation.
- 1956: Society for the Welfare of the Physically Handicapped, Poona.
- 1956: Occupational Therapy Home for Children, New Delhi; established by a father who sought aid for his crippled son.
- 1958: Nagpur Association for the Rehabilitation of Children with Orthopaedic Disabilities, Nagpur.

* This clinic has to date treated more than 4,600 persons and provided consultative services for over 9,000 (75).

- 1958: Cripples' Association, Ahmedabad; established by a group of handicapped persons.
- 1959: Society for the Education of the Crippled (Child and Adult), Bombay.
- 1960: First school for crippled children (with cerebral palsy), Bombay.

The Central Social Welfare Board acts as the coordinating agency for integrating the services of such voluntary groups, and providing grants for their programs (51).

Another milestone was the 1950 South East Asia Conference on Rehabilitation of Handicapped Children held at Jamshedpur under the joint auspices of the Government of India, the United Nations, and specialized agencies. A direct outcome of this conference was the decision to establish a rehabilitation and training center for India in the King Edward VII Memorial Hospital in Bombay, where between 1950 and 1954 an Occupational Therapy Training Centre and Physical Therapy School were started with the aid of the United Nations, ILO, WHO, UNICEF, the World Veterans Federation, and the International Society for Rehabilitation of the Disabled. The center in the hospital became in August 1955 a demonstration and training center to provide services for the entire country and to serve as a model for later rehabilitation programs, chiefly for the orthopedically handicapped. It is now known as the All-India Institute for Physical Medicine and Rehabilitation (AIIPMR). More recently it has added a Prosthetics Centre with the collaboration of the Society for the Rehabilitation of Crippled Children (448). Thus the center has grown from a small pilot project to a multi-faceted service that includes giving assistance to other civilian hospitals in establishing rehabilitation programs (17).

In 1950 there were 80 institutions for the blind and the deaf but only three for the crippled. By 1963 there were 100 institutions for the blind and 57 for the deaf but only 22 for the crippled in spite of the fact that they constitute a much larger propor-

tion of the population than do the blind and deaf (52). By 1967 there were about 15 institutions, primarily custodial in nature, for the adult orthopedically handicapped, and 25 institutions for crippled children with a total enrollment of about 1,000 (185). These services still fall far short of meeting the need. For example, an estimated total of 14,000 orthopedically handicapped persons in the city of Ahmedabad, Gujarat, have only two voluntary institutions to serve them (75).

As in other countries, impetus for the care and training of the orthopedically handicapped came from provisions made for wounded war veterans. In 1945, seven Services Convalescent Rehabilitation Centres (S.C.R.C.'s) were established, to provide for a total of 5,500 trainees, with specially trained rehabilitation officers stationed at these centers. These officers interviewed the disabled ex-servicemen to determine their physical and mental condition, assess their residual capacities, and record detailed information concerning them as a basis for referral to the Department of Labour Training Centres. Other specialized centers serving disabled veterans included St. Dunstan's Hostel for the War-Blinded, the Disabled Soldiers Home run by the Indian Red Cross, four Department of Labour training schools for the disabled, the Deaf and Dumb School, and the Queen Mary's Technical School for Disabled Indian Soldiers at Poona (17).

In World War II, injuries to the extremities constituted 60% of all the battle-incurred wounds. A similarly high proportion of limb injuries has been found in more recent service-incurred disabilities. A study was made of the rehabilitation potential of 76 "jawans" (servicemen) with injuries to their extremities incurred during the Indo-Pakistan conflict between September 6 and 23, 1965, who had been referred to the Occupational Therapy Department at the military hospital in Kirkee (Poona). All were males, most of them under 40 years of age. Most injuries were shell wounds or gunshot wounds, equally divided in terms of right or left side location, with only 6% bilateral in type. Fractures of the long bones of the extremities accounted for two-thirds of the physical injuries—39% arms and 27% legs, the remainder

representing amputations. All men were considered to have some rehabilitation potential, with 63% estimated to have a potential between 80% and 100%, and the remainder between 50% and 80% (389).

Rehabilitation centers are now being combined with hospitals, as illustrated by the Rani Chandramani Devi Children's Hospital at Visakhapatnam in Andhra Pradesh, which has a rehabilitation center for handicapped children.* The late Rani donated her palace and 100,000 rupees to establish a hospital patterned after the Children's Orthopaedic Hospital in Bombay. The hospital was started in the renovated building in 1965, and received gifts of various items of needed equipment. Finally the state government took over the project in January 1967. Although a few mentally retarded youngsters were admitted at first, the center provides primarily for polio and cerebral palsy cases. The 30 beds for in-patients are organized as a hospital school where treatment is combined with training in the activities of daily living, remedial exercises, regular education, and pre-vocational craft instruction. Besides the Director who is an orthopedic surgeon, two medical officers with specialities in physical therapy and pediatrics respectively, and two medical consultants in orthopedics and pediatrics, there are four teachers and a craft instructor. Children five to 15 years of age are admitted either as day patients or as in-patients, the aim being to return them to normal schools and life in the normal community wherever possible. Of 342 cases treated to date, 162 were polio victims, 84 cerebral palsy, and 40 mentally retarded (367).

The chief programs for the education and training of crippled children in India today include (1) bedside teaching in hospitals; (2) school units in hospitals; (3) special residential schools for crippled children; (4) special day schools for crippled children; and (5) facilities for including crippled children in regular day schools (118).

* The shortage of professional personnel which affects both the quality and quantity of rehabilitation services is described in the section on *Medical Services*. As one example, the state of Gujarat still has no training center for physical therapists and occupational therapists, even though it ranks close to the State of Maharashtra in many of its provisions for the handicapped.

The Bai Jerbai Wadia Hospital, Parel, Bombay, was the first hospital in India to provide a school for bedridden children. This was started in 1949 by the Tata School of Social Sciences under the municipal auspices of what was then called the Government of Bombay. Trained teachers conduct classes for children in two wards of 20 beds each, one for those with tuberculosis of the bones and joints, and the other for those with bone deformities. Teaching is adapted to the individual needs of the child, and includes educational, craft, and recreational activities. Instruction is given in Marathi, Hindi, and English, though the teachers know other dialects as well and use them when necessary.

The Children's Orthopaedic Hospital, Mahalaxmi, Bombay, is the only one where a regular, officially sponsored school unit is available to child patients. Although the hospital itself is operated by the Society for the Rehabilitation of Crippled Children, the school unit is directly under the authority of the Education Department of the Bombay Municipality. A separate room is provided for this instruction, and insofar as possible the regular elementary-school curriculum is followed.* Physical therapy, occupational therapy, and speech therapy services continue concurrently. A separate wing for the instruction and rehabilitation of cerebral palsied children is now attached to the hospital.

At the Medical College Hospital, Nagpur, an association for crippled children (NARCAOOD) provided the services of a teacher for all the children in the hospital, in cooperation with the occupational therapy department. In several other hospitals, however, the occupational therapist is called upon to assume the role of teacher as well. It is not considered necessary to have specially trained teachers for these youngsters since they do not present special educational problems; their basic difficulty is usually one of locomotion.

The Ishwari Prasad Dattatreya Orthopaedic Centre in Madras provides a combination of educational and medical services for children with neuromuscular disabilities. Founded in 1950 by Mr. and Mrs. Rao as a memorial to their cerebral palsied son who died at the age of 14, it is named in his honor and

* More recently their own well qualified, specially trained staff have taken over and the Municipality is giving a subsidy.

supported by his parents, who continue to devote all their time to the center. The Ministry of Education contributed part of the cost of constructing the building and the attached hostel for 72 children, and funds for patient maintenance (about 1,500 rupees per child per year) are donated by various individuals and charitable organizations. CARE donated the dining room furniture, and the Lions Club as its project for 1965-66 contributed a hydrotherapy unit.

A psychiatrist — an M.D. with psychological training — tests the children to determine their mental ability; he is occasionally helped by psychologists from the Department of Psychology in the University of Madras. Both boys and girls, five to 15 years of age, and of normal intelligence (chiefly polio and cerebral palsy cases) are accepted (189). The school has four teachers for the Montessori class and an elementary-school program comprising Classes I to VIII, in which Tamil and English, and Telugu and English, are taught. The children receive either bedside or classroom instruction depending on their physical condition. Classrooms are being moved from the main administration building to a separate school unit. In a public demonstration of Indian weaving and other handicrafts, the center has won prizes in the past two years.

Minor surgery is performed at the center, but for major surgery the children are sent to the Madras Orthopaedic Hospital. Dr. M. Natarajan, a surgeon at this hospital, serves as a consultant. There is a large physical therapy section in the center, and the means for an occupational therapy unit. Parents work with the physical therapists to learn the purpose of the various forms of treatment. (There is some volunteer help, but it is limited because the idea of such voluntary service is new to Indian women, and only those from well-to-do homes have the time for such service.) Up to March, 1966, 130 children had also received treatment as out-patients, with 24 now receiving such treatment; these are chiefly smaller children whose parents are taught how to treat them at home. Transportation is provided for this day treatment. Facilities are steadily being expanded; for example, in December 1967 a new out-patient wing was opened, and the foundation stone laid for a "Caliper Workshop" (315). The

center is said to be one of the only two institutions of this kind in India, the other being located in Punjab 200 miles from Delhi.

The Institute for Physical Medicine and Rehabilitation in New Delhi started a school in 1955 incidentally as a part of the Occupational Therapy Institute, with four children. It now provides for 200 boys and girls, both day and residential, whose age at admission is one to 16 years. Both mentally retarded and orthopedically handicapped youngsters are accepted, since the Director of the Institute believes that there are mutual advantages for these groups in sharing both educational and vocational activities. Chiefly post-polio and cerebral palsied cases are now accepted. The child may be referred by a hospital, a medical practitioner, an institution, or parents. According to the descriptive brochure of the Institute, services include assessment of mental and physical capacities for both educational and vocational purposes; physical therapy and occupational therapy; training in the activities of daily living, craft activities, and pre-vocational and vocational activities; regular school education; assessment of finger and hand dexterity for particular industrial jobs; training in music and gardening; and recreational activities to improve the personality and social adjustment (361). The children are taken up into the mountains each summer for a month's camp experience. A Hospital Volunteers Society composed of the wives of professional men gives assistance in the school. Fees are graduated according to the income level of the parents.

The only home for orthopedically handicapped children in the state of Gujarat was started at Baroda in 1960 by the state Department of Social Welfare, and admits children five or six years old who are committed by Juvenile Courts; 30 of the 43 pupils are residential (75).

Children with orthopedic handicaps often attend regular schools, though no figures are available as to the number of children or the nature of the disabilities. To encourage integration, a clinic was established in a school for 1,700 children in a poor district in Bombay where they can get help such as an orthopedic shoe or a brace. There are plans to make the same kind of service available in another school of 2,000 pupils, along with preventive work and attention to slow learners. This should

mean that more handicapped children can attend school and continue to live at home. The general policy of making minor adaptations in local schools to enable them to accept children with minor orthopedic handicaps is considered preferable to the use of the limited funds available to establish expensive residential centers for a few severely handicapped children (187). The existing homes and institutions for crippled children try to rehabilitate the youngsters to the point where they can attend a regular school.

In the different colleges in Bombay in 1959 there were about 50 orthopedically handicapped students, of whom only four or five were in medical or engineering colleges. As a result of a suggestion from the central Ministry of Education, the Inter-University Board has asked all universities to permit suitably prepared handicapped students to appear as private candidates for non-technical examinations and to provide them with some special facilities (52).

Like blind and deaf youngsters, the orthopedically handicapped can seek scholarships for continuing their education. In Maharashtra State 121 were awarded in 1961-62 (out of 157 applications) and 307 in 1965-66 (out of 630 applications). Applications are increasing more rapidly than the supply of such scholarships.

Special railway concessions facilitate the use of such educational opportunities. In 1965 it was announced that the Railway Board has agreed to give special concessions to orthopedically handicapped youngsters when travelling on educational tours (22). The Fellowship for the Physically Disabled was able to persuade the Railway Board that same year to waive charges for wheelchairs used by disabled passengers if these appliances were collapsible and could be carried in the compartment (21).*

* The special mobility problem of the orthopedically handicapped person were described in the June 1967 issue of *Fellowship*, concerning travel by tricycle or bus or train or car, movement during the rainy season, and indoor activities. Suggestions were given concerning needed improvements in apparatus and prostheses (369). It has been suggested that a voluntary organization such as the Rotary Club or Lions Club encourage the designing of a type of wheelchair with a wide price range, and with the cost of the wheelchair subsidized in needy cases from a special fund for this purpose (103).

Since relatively few crippled youngsters are able to obtain anything beyond a basic education, institutions making provision for them are faced with the problem of appropriate vocational training which will enable them to earn a living. There is increasing evidence of the lack of suitable vocational training and placement services for the orthopedically handicapped. Of the 500 orthopedically handicapped persons in the study conducted about ten years ago, 40% were found to be unemployed, most having lost their former employment because of the disability even though in some of the cases they would still have been able to perform the job satisfactorily. Nearly half of those in regular employment were in sedentary occupations such as those of clerks, teachers, merchants, journalists, insurance agents, and astrologers. Earning capacity was closely related to education. Only a third of the employed were content with their present work.

Vocational rehabilitation of orthopedically handicapped adults is especially difficult in the case of physically handicapped beggars whose self-attitudes often are a more serious obstacle to such rehabilitation than the handicap itself.

It is rather paradoxical that the same people who are disinclined to pay the crippled worker for work, readily become liberal in showering coins into the bowl of the crippled beggar for no work at all except the exposition of his disability. No wonder that after he settles down in this rather affluent undertaking, the crippled beggar flatly refuses to take up any job. During the initial period, when his sense of self-respect is not totally blunted he can be easily weaned away from begging. But once he sinks to the level of demoralization, it becomes very difficult to dissuade him from his abominable profession (52).*

The first sheltered workshop for the orthopedically handicapped in India was started in Bombay in 1957 by the Fellowship

* Details concerning pilot projects for the rehabilitation of beggars are described in the section on *Training and Employment Services*.

of the Physically Handicapped, using the Goodwill Industries of America as a model. Tools, machinery, and other equipment were donated by the public. Starting with paper bags and gauze masks, the workshop moved on to include carpentry, printing and bookbinding, box and file making, toy making, album making, umbrella making, box and carton making, handloom weaving, plastic welding, hard plastic moulding, painting of birds, assembly work with safety pins, making radio components, and making components for electronic computers (20, 51). Work is obtained either through direct orders or on a sub-contract basis. Maximum employment in the 1965-66 period was 137. All applicants for work are screened beforehand at the Municipal T.B. Clinic. The chief source of income is from the sale of manufactured items, though the state government provides a subsidy of 30 rupees per person or two-thirds of the operating expenses, whichever is less. The remainder of the costs is borne by the Fellowship (21). The Fellowship has recently negotiated a three-year pilot project for the training of the handicapped for employment in the metal industries with SRS help.

Other sheltered workshops have since been established by state-aided voluntary societies. Vocational rehabilitation centers specifically for miners have been established by the Ministry of Labour at Dhanbad and Asansol (52).

Queen Mary's Technical School at Poona has trained many disabled as well as able-bodied ex-servicemen in trades such as tailoring, weaving, driving, automobile repair, dyeing, printing, and electrical engineering. Courses range from eight to 18 months in length, and follow syllabi established by the Department of Technical Education of Maharashtra State, which also gives the examinations and awards diplomas. All expenses are paid, including medical care, rail fare to and from their homes, and a small stipend for incidental expenses. It is hoped that training can be provided for their dependents as well. The motto of this institution, inscribed on the front of the school, is "Though hurt, I grow" (121).

The Institute of Physical Medicine and Rehabilitation in New Delhi provides some sheltered employment. Initially called the Occupational Therapy Institute, it was later reorganized and expanded, and in 1960 was given its present name in order to indicate a more comprehensive program. In 1961 a sheltered workshop for adults was attached, and in 1964 the Ministry of Health recognized its program for training in physio-occupational therapy, which started with eight students in the physical therapy course and eight in the occupational therapy course. In actual practice this was a combined program of training, which the government required to be reorganized as completely separate programs in 1967. The sheltered workshop now accommodates 180 persons, including some mentally retarded who stay a year or two for vocational training. The workshop is a training center rather than a production center. The policy is to have the mentally retarded and the physically handicapped mingle in both school and work situations. Apparently the idea is that "the physically handicapped provide the brains and the mentally handicapped provide the muscles." This may not further the aim of maximum realization of potential for each group.

The greatest variety and the largest number of provisions for the orthopedically handicapped are found in the state of Maharashtra (370):

Institutions for crippled children. The state government has three homes for crippled children, at Nagpur, Miraj-Sangli and at Aurangabad, with a capacity of 25 residential pupils each, plus some day pupils for whom a school bus is provided. Primary and pre-vocational instruction are provided, with an excellent program and trained personnel. The Home for Crippled Children in Nagpur was opened in 1960 by the Directorate of Social Welfare with a staff consisting of a superintendent, occupational therapist, craft teacher, school teacher, and some assistants. Since a physical therapist was not available, prescribed exercises were carried out by the occupational therapist. An advisory Board considers admissions and gives advice concerning the general operation of the home. Services include treatment, pre-vocational craft training, and formal education to

enable them to return to their regular school when possible. Since 1960 similar homes have been opened by the Directorate at Aurangabad and Sangli (333).

The Society for the Welfare of the Physically Handicapped, Poona. This institution, supported by both voluntary and government funds, has 50 residential children — crippled boys, many of them orphans, who are committed by the Juvenile Court and who are provided with food, clothing, medical treatment, education, and vocational training. As many as possible attend the local municipal school (333).

School for crippled children at Aney, Taluka Junnar, Poona. This is a voluntary project.

St. Crispin's Home, Poona. This home admits crippled orphans.

Hospital School, Bai Jerbai Wadia Hospital, Bombay. This school was organized by the Tata Institute of Social Sciences.

Day School, Society for the Education of Crippled Children, Bombay. Both voluntary and government funds support this project. The Society itself was founded in Bombay in 1958 and registered in 1959. In 1960 the S.E.C. Day School for Crippled Children began its operations. In 1965 the Bombay Municipal Corporation agreed to provide rent-free premises and all the normal and specialized equipment for this school. Various voluntary organizations and individuals sponsored a total of 15 of the 38 children (five to 17 years of age) enrolled that year, and 19 out of 39 the following year. The number of children served rose from 13 in 1960 to 40 in January 1967. The school accepts physically handicapped children who cannot attend regular schools. School hours are from 10 to 4, five days a week, and bus service is provided. Only children with normal intelligence are accepted. Formal education, on pre-primary, primary, and secondary levels, is given in Gujarati and Marathi, with English and Hindi taught as subjects. Music and handicrafts form a part of the curriculum, and some extracurricular activities are provided, such as Friday evening programs of recreation when groups of Girl Guides spend about an hour with the children and play games with them. Excursions and picnics are

arranged, and holiday camps are available for vacation periods for disabled children from Bombay and other parts of the state. By early 1967 the Society for the Education of the Crippled (Child and Adult) had conducted three such camps, two at Pachmari and one at Hyderabad. The school charges five rupees for tuition, which helps very little with operation costs but which serves to give parents the feeling that they are responsible for their child (426).

Fellowship of the Physically Handicapped, Bombay. This organization was started in 1955 under the leadership of Mrs. Fathema Ismail, who is still President. Its workshop, which moved to new quarters in 1963, gives employment to both men and women. The membership of the Fellowship in 1965 totaled 260 persons, of whom 144 were handicapped. The quarterly *Fellowship* is published in issues of 500 copies. Four similar groups are modelled after the Fellowship (20):

Apang Manav Mandal, Ahmedabad*

The Association of the Physically Handicapped,
Bangalore

Indian Association for the Physically Handicapped,
Delhi**

Welfare Association for the Physically Handicapped,
Calcutta

Government Sheltered Workshop, Nagpur. This workshop has both training and production divisions. Training is given 60 persons yearly in armature winding, leather work, sheetmetal work, tailoring, carpentry, and book-binding.

The Society for the Welfare of the Physically Handicapped, Wanowrie, Poona. This group is also organizing a sheltered workshop.

The Nagpur Association for Rehabilitation of Children and Adults with Orthopaedic and Other Disabilities (known as NARCAOOD).

* This organization was formed by the handicapped themselves in 1958. The first workshop for the orthopedically handicapped in the state of Gujarat was started by this group in 1960 with two trainees, though they now have a total of 40 crippled workers (75).

** Now closed.

This was a 1958 joint project of the local Rotary Club and the Medical Association to give counsel on the problems of the handicapped. Recently they have expanded their vocational assistance and research programs with SRS help. In 1959 NARCAOOD started a day school for cerebral palsied children at Nagpur, with a four-hour session in general education, remedial exercises, and training in the activities of daily living. This school was discontinued the next year, however, when the state government started a crippled children's home. Unfortunately this home, partly for lack of funds, has since been discontinued. A section of the Nagpur Home for the Aged and Handicapped now gives some basic education and treatment to a few severely handicapped children (333).

The organization and administration of services for the handicapped in other states is usually similar to that found in Maharashtra State. Most states have a state council for work with the handicapped similar to the National Council of the central government. For example, the state government in Madras has formed an interdepartmental Committee for Rehabilitation of the Handicapped with the Minister of Health as chairman, and with representatives from medical, educational, industrial, and employment fields. This committee proposes programs of coordinated action to be taken by the various departments of the government in the field of rehabilitation (294).

Many suggestions have been offered for making services for the orthopedically handicapped in India more adequate (333):

1. Increase in aid to crippled persons in rural areas.
2. Prevention of accidents through public education.
3. More assistance to the severely handicapped by removal of architectural barriers in schools and other public buildings.
4. Provision of simple and inexpensive aids and equipment for crippled children attending regular schools.
5. Tutoring service for these children to enable them to handle the regular curriculum.

6. Training and orientation of regular teachers regarding the special needs of orthopedically handicapped children in their classes.
7. More adequate pre-vocational and vocational training.

BURNS

Burns cases are common in Indian hospitals because people still live in dark huts and small rooms with improper ventilation and with kerosene lamps for light. In such homes, in a small, dark, and probably congested room used as the kitchen, one finds the "sigri" or stove burning on the floor and the cooking supplies such as salt, sugar, ghee (butter fat), etc. kept on a shelf above this "sigri" or scattered around the stove. Thus when a woman reaches for a jar of salt or some other cooking item while preparing food, her sari brushes against the fire and in many cases catches on fire. A study was made of an 18 year-old girl who after being burned was first treated at home with herbs and local medicines. The wounds healed with marked thick scar contractions of chin, axilla, elbows, and fingers which in spite of massage and other treatment could not disappear, and which also crippled her in the use of her limbs as well as in her physical appearance. After 15 weeks of medical and therapeutic treatment in a hospital she returned home and resumed her normal life, even taking the final school examinations (she had been in the last year of high school when the accident occurred). Home exercise and treatment were continued, with some additional operations (344).

Although reconstructive surgery for deformities resulting from leprosy and burns is performed at the Christian Medical Center Hospital in Vellore, the Sir J. J. Group of Hospitals in Bombay, Chingleput and other places, the emphasis is primarily on medical rehabilitation rather than on an integrated program of social and economic rehabilitation. One doctor from the Plastic Surgery Unit of the Sir J. J. Group of Hospitals was given an SRS grant for a three-year study of beggars and non-beggars to assess the long-term effects of surgical treatment for leprosy and burns. Because of inadequate medical care, the mortality

rate is very high, and the hospital stay of survivors is prolonged by secondary infection and lack of early and extensive skin grafting. Many of these patients after months of treatment in the general wards of a hospital develop gross contractures which require still further reconstructive surgery. It is believed that intensive education that cooking should be done above the floor level would be helpful, as there is clear statistical demonstration of the relation of this factor to burns (25).

Some evidence of this casual relationship was provided by a survey concerning the problems imposed by burns. This investigation was carried out in Greater Bombay with the aid of SRS grants by the Tata Department of Plastic Surgery at the Sir J. J. Group of Hospitals, using a full-time medical social worker for this purpose. It was found that 93% of the burns were accidental and only 7% suicidal or homicidal. Over half (55%) of the patients were women, and 74% of the burns occurred not in factories or workshops but in the home. Here again the burns resulted primarily from the fact that saris or flowing garments caught fire from incorrectly used pressure stoves or wick lamps. The faulty ignition of a pressure stove was often the starting point of the catastrophe. Tiny tots were injured by spilled hot liquids as they explored the kitchen, where cooking is generally conducted at floor level. Industrial accidents resulted largely from steam. Of all the accidents investigated, 16% of the victims died, and when over 40% of the body surface was involved, mortality was 80% to 90%. Survivors experienced great pain and discomfort followed by deformities and facial disfigurement (427).

In another study, 95% of the burns cases were found to result from accidents, 4% from suicide attempts, and 1% from homicide. Most occurred at home (70%) and 29% in industry. In domestic burns, 29.5% resulted from a pressure stove, 6.75% from oil lamps, and 26% from hot liquids. In industry, important agents were sulphuric acid (6%) and hot steam (10%) (92).

Medical experts emphasize that immediate treatment for a burns patient is essential, and that to this end there should be a central treatment institute for burns in every city to which burns

victims could be rushed at once. In addition, they point out that much attention needs to be given to the psychological re-adjustment of the victim and his family and friends as well as to the medical aspects of the treatment (427).

Current research projects related to burns patients subsidized by Social and Rehabilitation Service of the U.S. Department of Health, Education, and Welfare include the following (241):

Tata Department of Plastic Surgery, J. J. Group of Hospitals, Bombay. To develop methods for rehabilitation of burns patients and patients deformed by leprosy.

Kasturba Medical College, Manipal. To establish a center for research on the management and rehabilitation of persons disabled from burns.

Wanless Hospital, Miraj Medical Center, Miraj. To develop and evaluate methods for the rehabilitation of severely burned patients under the conditions existing in developing countries.

Tata Department of Plastic Surgery, J. J. Group of Hospitals, Bombay. To investigate methods for the management and rehabilitation of burns patients, including studies of the effects of climate conditioning.

Christian Medical College and Hospital, Ludhiana. To study the treatment and rehabilitation of burns trauma in a varying tropical environment.

TUBERCULOSIS

Both tuberculosis of the bones and joints and respiratory tuberculosis are still rampant in India. But as with other handicapping conditions, estimates of the number of persons affected by tuberculosis vary greatly. A ministry of Education official in 1967 gave an estimate of 700,000 tubercular persons in India (185). The Tuberculosis Association of India also cites this estimate, indicating that half of these cases are infectious. On

the other hand, a 1963 publication estimated that 2,500,000 persons in India had tuberculosis, and that about 500,000 died of this disease each year, the incidence being related to unsanitary and over-crowded living conditions as well as malnutrition (51).

An even larger estimate resulted from a National Sample Survey conducted during 1955 and 1958 which covered about 300,000 people in six large cities, 30 towns, and 151 villages situated in six different zones in India. The survey was carried out with mass miniature radiography and with bacteriological examination of sputum for selected groups. The following were the principal findings: (166):

1. The prevalence rate of active and probably active tuberculosis varied between 1.3% and 2.5%, and the bacteriologically positive cases ranged from 0.2% to 0.8% of the population.
2. The prevalence rate was about the same for rural and urban areas.
3. The prevalence rate in general showed a continuous rise with age.
4. Most of the cases discovered showed a moderately advanced stage of the disease.

It was estimated that between 9,000,000 and 10,000,000* adults were suffering from radiologically active tuberculosis. Subsequent surveys have shown a decline in the mortality rate though not in the extent of the disease.

Tuberculosis became widespread in South Asia at the beginning of the present century, and by 1950 accounted for from 15% to 20% of the deaths in large Indian cities. A B.C.G. vaccination program was initiated in India in 1948, and by the end of 1960,

* "According to a December 1968 report of the Government of India, TB is now the killer no. 1 in India. About 1.5% of the population has the disease (X-ray cases) (Prevalence rate). There are about 7.8 million TB Patients in India of which nearly 2 million are infectious."

167,000,000 persons had been tuberculin-tested and 57,000,000 vaccinated by about 170* teams working in the different states (281). The first center for rehabilitation of the handicapped in Madras State was the one established in 1953 for recovered tuberculosis patients in Tambaram (295).

Tuberculosis began to decline in western countries long before the tubercle bacillus was discovered, because of the rise in the standard of living following the Industrial Revolution, but in India any appreciable rise in the standard of living is likely to be very slow, and therefore control of tuberculosis must depend primarily upon discovering the sources of infection and giving treatment. Since there are no dramatic symptoms in the early stages of the disease, many cases go undetected until the disease becomes firmly entrenched. In Delhi there are an estimated 40,000 to 50,000 cases, about 10,000 of whom are likely to be infectious and the remainder non-infectious but potentially so. Not more than half of the infectious cases and not more than a third of the non-infectious are likely to be known. To discover them all a mass X-Ray program and sputum examination would be necessary, but community resources are not adequate for such a program. BCG vaccination needs to be made widely available for uninfected persons. Close cooperation between voluntary and government agencies will be essential, for as in many countries voluntary groups often publicize a need and demonstrate the feasibility of meeting this need in particular ways. In Delhi small voluntary Care and After-Care Committees were set up nearly 20 years ago to collect money and provide services for the poor in their particular districts, even providing free drugs to needy patients until the government took over this function in 1962. Other services in addition to free drugs that the voluntary groups have provided have been: food or monetary assistance if the breadwinner in the family is a tuberculosis patient and cannot work; transportation to and from the clinic; educational expenses for the patient's children; and clothing for the family. The three Care Committees attached to the New Delhi Tuberculosis Centre are credited with a pioneer venture in screening a population of nearly 150,000 to discover unknown early cases of

* 231 teams were working in 1969.

tuberculosis to make possible early treatment and elimination of this potential risk to the community (339).

Although there are numerous out-patient clinics throughout the country, the actual number of hospital beds for them in hospitals and sanatoria is only 35,000 (186). There are no vocational rehabilitation services for those permanently disabled by the disease, except in a very few locations like the center established at Tambaram in 1953 for rehabilitating recovered tuberculosis patients, which was the first center for any kind of rehabilitation of the handicapped in Madras State (295). Only three or four sanatoria provide some kind of occupational therapy.

In Greater Bombay the Municipal Corporation is primarily responsible for medical relief and public health measures, including anti-T.B. measures for a population of about 5,000,000. The municipal tuberculosis services include 1,290 beds for pulmonary T.B. patients providing for all kinds of tests, and medical and surgical treatment; four well equipped T.B. clinics providing diagnostic services, ambulatory treatment, contact examinations, and health visiting; BCG vaccination of the newborn, and eventual establishment of three integrated T.B. Service Centres. BCG vaccination was introduced in 1949, and there are now 213 BCG vaccination teams working in the country.

The Tuberculosis Association of India was a pioneer national voluntary organization established in 1939 to undertake anti-tuberculosis activities at a time when there were no government plans of this kind. In cooperation with other public and private health agencies it carries out a program of health education in tuberculosis control, organizes annual conferences of tuberculosis workers and administrators, gives an annual training course for Health Visitors, publishes the quarterly *Indian Journal of Tuberculosis*. The Association encouraged the formation of twenty state associations, and started a tuberculosis seal campaign in 1950.

Plans are being made for a national T.B. control program centered in districts. There are 336 districts in India,

and each is to have a hospital, a tuberculosis center, about 20 public health centers, and a team of trained personnel comprising a District Tuberculosis Officer, two to four Health Visitors, two laboratory technicians, an X-ray technician, a BCG team leader, and preferably a statistical clerk for the district tuberculosis center. This center will undertake to discover and treat cases, give free drugs to all patients, and organize the distribution of drugs and checking on patients in their homes to be sure they take their drugs regularly during the year. The central government will provide up to 75% of the cost of the center building and 50% of the operating costs. UNICEF will also furnish some equipment and supplies.

Since the number of deaths resulting from tuberculosis was estimated in 1967 as between 412,000 and 515,000, it therefore ranks as the second major cause of death in India, after diseases of the intestines, diarrheas, and dysentery. It is further estimated that in a given year a total of $2\frac{1}{2}$ billion man-hours are lost because of the disease (166).

The 1961 report of the Indian Health Survey and Planning Committee indicated that in spite of a large-scale campaign against tuberculosis, this disease would probably continue to be the most serious single disease problem in India for some time to come (281).

Chapter 9

THE LEPROSY-AFFECTED

Leprosy, almost non-existent in western countries, remains a critical problem in most African and Asian countries. The estimates of the number of persons affected by this disease vary considerably, ranging from 10,000,000 to 20,000,000 people in the world as a whole (168, 372, 386, 404), with one-fifth to one-half of these in India (93, 373, 404). About 80% are found in Africa and Asia (386). Indian government estimates of the number in India also vary, as indicated by a 1965 Ministry of Health figure of 2,500,000 leprosy victims (194) and a 1967 Ministry of Education estimate of between 500,000 and 2,000,000 (185). The real incidence, when based on pilot surveys, exceeds these estimates (62). The numbers reported continue to increase, though this may reflect more accurate reporting rather than an actual increase, with better fact-finding procedures and greater willingness on the part of leprosy victims to come forward to claim the help they hear can be obtained (88a).

In India few efforts were made till recent years to determine the number of persons suffering from leprosy. One early study revealed a total of 4,150 leprosy patients in a community of 300 villages and 200,000 people (428). Extrapolations from these data would give a total of nearly 11,000,000 in the country as a whole. A recent estimate with a range from 2,000,000 to 2,500,000 was based on a survey made between 1951, when the National Leprosy Control Programme was established, and 1963. Incidence was determined among 53,300,000 persons out of an estimated 300,000,000 living in the endemic areas, and was found

to total 550,000, or a little more than one per thousand in this group. (403). Of the estimated cases, only about 10% receive any medical attention, and only a little over 1% are isolated in hospitals or centers even though approximately 20% are considered to be in a highly infectious condition (281).

No one knows the origins of leprosy, variously attributed to ancient Egypt and to ancient India (187).

It has been said that leprosy is as old as the world itself. Egyptian accounts tell of a disease resembling leprosy as early as 4600 B.C. (480).

Egyptian papyri of 1350 B.C. describe leprosy as a disease among the negro slaves of the Sudan (170). In India for more than 3,000 years there have been stories, true or mythological, about leprosy, and among them is the story of Rama's Queen Mother who left her throne and her home to care for persons suffering from advanced states of the disease (187). The Vedas in India referred in 1400 B.C. to a disease similar to leprosy, as did a Chinese script with the probable date of 600 B.C.*

The earliest organized effort to control leprosy was a colony established by Christian missionaries in Calcutta in the early nineteen hundreds (93). In the latter part of that century, Father Damien and other missionaries made public the deplorable conditions in which persons with leprosy lived (428). A society called the Mission to Lepers (later renamed the American Leprosy Mission) was founded, and opened its first colony in Chamba

* The term "leprosy" was first used as a translation of the Hebrew word "zaraath" from the Old Testament, a Levitic word implying not only a disease but also an affliction placed upon man by God because of his sins (384). Actually the term leprosy used in translating Biblical accounts referred in most cases to other skin conditions having no connection with this disease. The error may have stemmed not from translation itself but from original misdiagnoses arising from a fear of leprosy that led to the interpretation of any severe skin disease as evidence of leprosy (386). The word leprosy itself is derived from a Greek word "lepros" meaning "scaly." But the first good clinical description of leprosy did not appear till 1874, when the Norwegian physician Dr. Armauer Hansen isolated the rod-shaped bacillus "mycobacterium leprae" (384).

in the Punjab in 1875. Such work was given impetus by the government itself after the formation of the Indian Branch of the British Empire Relief Association in 1924. Since that time, pioneer workers in the field of medical treatment for leprosy have included Indian physicians such as Dr. Dharmendra, Dr. R. V. Wardekar, Dr. Khoosru, and Dr. R. P. Kapur and The Organising Secretary of the Indian Leprosy Society, (H.K.N.S.) Prof. (Hon.) T. N. Jagdisan (93).

Gandhi's concern for those with leprosy was both compassionate and scientific, and dated from experiences in South Africa in the late 1890's. He sent a special message to the All-India Leprosy Workers' Conference held at Wardha in October 1947, only two months after India had achieved independence. The leprosy patient was for him not only a "case" but a "cause" (194). The importance of Gandhi's efforts has been recognized in the naming of the Gandhi Memorial Leprosy Foundation, and in celebrating World Leprosy Day in India on his Martyr Day each January.

The practice of providing separate "colonies" for those with leprosy persisted until about 20 years ago when sulfone treatment was introduced. Up until that time lay missionaries and non-professional social workers were more interested in working with leprosy patients than were medical persons. The names of the residential institutions — "colonies" or "sanitaria" or "asylums" or "homes"—did not clearly indicate the nature of their services. It has been suggested that more precise specification of the kind of services provided would be afforded by adopting the following classification and nomenclature:

Leprosy hospital: an institution for acutely ill or complicated cases requiring close medical supervision, intensive therapy, and re-constructive surgery.

Leprosarium or leprosy sanatorium: an institution meant for segregation of infectious cases, though present policy indicates isolation within the home rather than in a separate establishment.

Leprosy infirmary: an institution caring for severely crippled leprosy patients.

Leprosy asylum: an institution providing free room, board, and clothing for leprosy patients who are able to work but who have been forced to leave their homes and have no place to go; if they do work, they may or may not be paid.

Leprosy in-patient institution: one which functions partly as asylum and partly as sanatorium, infirmary, or hospital, where patients with a variety of needs are grouped together; many present-day institutions fit into this category.

The first four categories indicate a decreasing extent of medical care and a decreasing length of stay in the institution concerned. There are also the non-institutional "leprosy villages" and "leprosy settlements" which do not parallel the above types. In addition there are a few colonies, especially some island-colonies, which do not fit into any of the suggested categories and which present some special problems. While in-patient in nature, these colonies have no regular institutional discipline; couples live together, children are born there who spend their lives in the colony, and healthy persons come to stay with relatives. They sell products to the government, which is at the same time paying their living expenses, and the total cost to society is greater than a similar group on the mainland. Another type of problem colony is the "free colony" consisting of beggars and runaways who live together in a closely knit group depending on undesirable means of livelihood such as begging and theft.

Patients in colonies are particularly in need of rehabilitation because their relatives have severed ties with them and they are almost destitute. The colony is considered no answer even to the problem of possible infection of others; in the first place, institutional care of this kind is not always available, and it fails to isolate the patient in the early critical period of infection since

most infectious cases remain unrecognizable for two or three years (473).

An early attempt to get exact information about the number of patients and the problems they faced was made in a study in Chingleput Taluk in Madras State. Data were obtained concerning the incapacity suffered in economic life, the attitudes of leprosy patients toward rehabilitation, and the feasibility of various rehabilitation measures. The villages included were a representative sample of 62 or 20% of the 300 villages studied in an earlier survey (428), though in this case females, children below 15 years of age, and adults over 60 were excluded. A total of 409 adult males 15 to 60 years of age was included in the study, out of 1,166 leprosy patients in these villages with 62,000 people. Agriculture was their chief occupation, supported by some traditional crafts and trades.

Economic disadvantage was experienced by 39% of the cases, 25% were seriously affected, and nearly 10% were unemployed. The economic problems resulted from deformity rather than from social attitudes. The patients' attitudes toward the various rehabilitation measures offered were negative or vague, perhaps because they felt secure in their social environment in spite of economic "worsening" (there was only one professional beggar among them). Thus most of them felt they did not want vocational rehabilitation and did not need it. About a quarter of them did feel correction of deformities would solve their problems, and another quarter were too badly deformed for rehabilitation. Most would benefit from some monetary assistance, and perhaps did not need institutional care. Only four of the patients affected in a serious economic way were willing and able to undertake a program of vocational rehabilitation.

This survey was one of the first to emphasize rehabilitation needs in place of custodial care. An institution was founded at Polambakkam in South India in 1937 to provide this emphasis (168a).

In a study of 75 leprosy patients with plantar ulcers under treatment at the Christian Medical College and Hospital in Vel-

lore, socio-economic factors were found to affect both the incidence and the perpetuation of the ulcers. Of these 75 patients, 81% were ignorant of the source of contact, 33% were illiterate, nearly half were unmarried, and in this group the reason in most cases was the deformity itself. Also more than two-thirds (68%) were day laborers, unemployed, or mendicants. The ulcerous condition necessitated changes of occupation among those previously employed (405).

There is no accurate estimate of the actual number of beggars with leprosy. About 1,000 of them are now in State Beggar Homes in Maharashtra, but the total population of beggars fluctuates because of the influx of beggars from other parts of the country, especially from the South. Some believe that beggars are the chief means of spreading leprosy and that beggars with leprosy are the real leprosy problem in India, but they probably constitute more of a social than a medical problem, since they usually are "burnt-out" cases. The Prevention of Begging Act has so far neither improved their lot nor curtailed their begging. A separate section in the Employment Exchange to aid leprosy-affected beggars to find employment has been recommended (93).

No more than 10% of the total leprosy patients become beggars, with an even lower percentage in Maharashtra State. Of 5,000 beggars given temporary accommodations by its Social Welfare Department in 1963, about 100 were suffering from leprosy, of whom only 30% were actually under treatment. Of the estimated 300,000 leprosy cases in this state, 4,000 are in colonies, 80,000 are receiving out-patient treatment, a few thousands are beggars, and the remaining 200,000 or more are still in their homes, probably unidentified and untreated. Colony patients in particular need rehabilitation since their families have cut off all contact with them and they have no other resources. Most persons receiving out-patient treatment have jobs, but leprosy patients who are beggars need rehabilitation (473).

A study is now being made of the residents in "free leprosy colonies," which have tended to perpetuate the concept of permanent separateness of those with leprosy. There are at least 36

such colonies in Maharashtra State, and possibly hundreds in the whole of India, where communities have permitted migratory groups of leprosy-affected persons to settle in colonies lacking any social controls or communications with the normal community. Such groups have become breeding grounds for delinquent and criminal behavior, with begging as the chief occupation. A pilot study of one free colony eight miles from Poona indicated a total of 47 males, 54 females, and 8 children, with most in the age range 31 to 50. Older persons are less likely to be included since they have more difficulty being self-sufficient and could not find support in a colony lacking a pattern of family organization and responsibility for other members of the group. Of the 101 persons, all had taken to begging except one, who earned daily wages as a mason. The average income was only 30 rupees a month. Nearly half were single, widowed, separated or deserted, or living in a common-law relationship. The rate of illiteracy was higher than in the general population. At least half had up to eight years of prior institutional life, and many had migrated from other colonies. Most had had to leave their families because of village community pressure. Only 27 reported having treatment while with their own families even though it was available. Most came from a rural, agricultural background, and most also had physical stigmata or physical disabilities. Favorable indications of the possible success of a rehabilitation project within the setting of the colony were: (1) keen awareness, on the part of most persons, of their physical and medical and employment needs; (2) continuation of some kind of contact with family members by 42 of the 101 persons; (3) willingness of 81 persons in the group to undertake any kind of employment; (4) increasing concern and interest shown by the normal community in their plight (378).

The major obstacles to the satisfactory rehabilitation of the leprosy patient in India are: (1) psychological and social; (2) medical; and (3) vocational.

Negative Attitudes

An important psychological barrier is that of attitudes—the attitude of the patient toward himself, the attitude toward him

of family and friends, the attitude of the general public (402), and the attitude of potential employers.

From first to last, it is not the disease that the leprosy patient dreads, but the attitude of people towards him and the dire results of that attitude on every aspect of his life (404).

Attitudes in Indian communities apparently vary considerably; in one village people may be helpful and concerned, whereas in others persons with leprosy are severely ostracized (187). Un-reasoning terror and extreme pity are still the most common attitudes found.

Deep-seated prejudices and fears include the Hindu belief that leprosy represents a "divine curse" rather than a disease, that afflictions suffered in one's present life are a form of punishment for misdeeds in a previous incarnation. Or leprosy may be regarded as punishment for sexual misdemeanors and other immoral acts. There is also the Mohammedan belief that leprosy is imposed by the will of Allah, with no apparent reason, to be endured stoically, and the associated belief that the resulting deformities are to be welcomed as providing the faithful with the chance to gain heavenly credit by giving alms. Sometimes it is believed that the eating of certain foods or the breaking of a taboo may account for the leprosy (62). Such beliefs lead to attitudes of fatalistic acceptance and resignation on the part of the patient and his family, and prevent many from seeking medical help even when it is available (404).

Even socially prominent families with a high income level may hide relatives with leprosy in the home. The Indian woman may note some early signs of the disease but hide them as long as possible since in many cases the husband would abandon her outright and cease to provide for her if he suspected that she were infected with leprosy.

Millions of Indians still think of leprosy as a virulent, threatening, horrifying condition, at best a hopeless and highly infectious disease (195). Three persisting false assumptions are that

(1) leprosy is very contagious; (2) it is incurable; and (3) people with leprosy are accursed people (480). These beliefs persist in spite of the fact that it is actually a mild communicable disease which is transmitted only through long intimate contact. Also, with the development of the sulfone drugs in 1941, adequate specific treatment finally became available which makes it possible to treat leprosy effectively and inexpensively long before disfigurement and deformity are likely to occur (384).

Social stigmata and prejudice are more difficult to cure than virulent infection. For thousands of years the No. 1 disease in this category has been leprosy. It is still so today even though it is much less infectious than tuberculosis or the common cold (386).

The Indian public is also usually unaware of the fact that even the deformities are not necessarily a permanent handicap, since in recent years increasing attention has been devoted to orthopedic and plastic surgical treatment for deteriorated body parts. But the lack of early dramatic symptoms may encourage indifference on the part of the patient unless he has a more sophisticated knowledge concerning the disease and the kind of treatment needed. Actual awareness of the condition may come as an unbearable shock, as shameful knowledge to be hidden from family and friends in order to avoid ostracism and rejection. But continued misuse of anesthetized hands and feet may lead to the deformities that disable the patient and reinforce the negative prejudices of others toward the disease (195).

In well-established cases of leprosy and after periods of acute exacerbation, extensive damage is done to the peripheral nerves. Contractures, atrophy of skin and muscles, anesthesia, and absorption of the small bones of the hand and feet are irreversible changes and are considered severe disabilities which frequently handicap the patient (480).

Even unwise treatment with excessive dosages of D.D.S. (diamino-diphenyl-sulfone) have been known to hasten nerve damage and produce reactions that contribute to the development of

deformities (25). Also the changes wrought by corrective surgery, however desirable and necessary, may, when apparent to the observer, precipitate prejudiced reactions (187).

A high level of general education on the part of the Indian observer does not guarantee a more favorable outlook on leprosy:

The more educated and sophisticated a person is the more prejudiced he is against leprosy (473).

It has been necessary to change not only the attitudes of the general public, which has characteristically ostracized the leprosy patient, but even the attitudes of voluntary workers motivated primarily by pity, compassion, or a sense of religious obligation (378), since there may still be a subtle downgrading of the patient in implicitly superior attitudes, or an inability to regard the leprosy patient as a person capable of leading a useful and normal life when given the proper kind of assistance, rather than remaining an object of charity (88a).

The attitudes of the medical personnel themselves may need alteration. Many physicians are themselves not free from a subconscious fear of the disease, heightened perhaps by the stubborn manner in which leprosy has refused to yield up its biologic secrets (372).

Some medical persons may have attitudes of indifference and apathy toward leprosy, combined with a fear that they might lose more lucrative practice if it became known that they treated leprosy patients (404). Where negative attitudes are found among medical and paramedical personnel, the attitudes may be due in part to the fact that few of them have had any training or modern information concerning leprosy control and leprosy rehabilitation (190).

The terminology used in referring to the patient or to the disease may be indicative of negative attitudes. For example, in Hindi the common word for leprosy is "maharog" which means "the great disease," whereas medically the disease is known variously

as leprosy, Hansen's disease, or mycobacterial neurodermatosis (372). Though the neutral term "Hansen's disease" is generally recommended, the term leprosy continues to be used because of its greater familiarity. The patient himself is increasingly referred to, not as a leper, but as a person with leprosy, a leprosy-affected person, a leprosy victim, or a leprosy patient.

Programs of health education are being directed against misinformation, ignorance, and prejudiced attitudes. The Gandhi Memorial Leprosy Foundation has conducted special courses for physicians and training courses in health education, with four classes a year. The first course for eight students, lasting two months, was completed in 1968. The students were paramedical workers with training and at least five years of experience in leprosy work. The central government plans to organize some Urban Leprosy Centres to provide programs of health education, with a curriculum that will include theoretical instruction, field work, and instruction in English. No tuition fees will be charged for these courses (137).

Medical Problems

Although there are over 200 leprosy institutions in India with facilities for about 2,000 patients, few of them are doing what could be called real rehabilitation work in either a medical or a vocational sense (473). Institutional treatment for all cases is neither feasible nor desirable, however, since it would mean segregated treatment for most of the patient's life.

The public health services program now emphasizes: (1) early detection and treatment of leprosy to prevent the deterioration and deformities formerly accepted as an inevitable accompaniment of leprosy; and (2) rehabilitation and eventual return of institutionalized patients to society, instead of permanent separation and isolation of those afflicted. It is expected that the need for institutional care will diminish, since many present-day experts believe that the most reasonable and economical method of looking after the unemployable leprosy patient is to encourage relatives to care for him, with a subsidy if necessary. It is recommended that those now in colonies be encouraged to return home when possible.

and that no new crippled cases be admitted to colonies in the future. At the same time, colonies for short-term treatment are still needed, as well as a kind of accommodation for patients who are able and willing to work but who are not being absorbed into the community; for them a kind of settlement may be established where they can live and work for their maintenance (473). Preventive facilities for children are to be included in general Child Care Homes when home treatment is not available (93).

One Indian study has shown that the age of onset of leprosy has two peaks, one at age nine and one at age 23 (168b). Special health and cleanliness precautions should therefore be taken at these ages. Leprosy is unusual in children under three years of age for it is rarely congenital, and a child separated early from a contagious mother seldom develops the disease. But cases of infection in children frequently are overlooked, and the actual source of infection may not be certain even when infection is detected in the child, because of the long latent or incubation period, the slow, painless onset of the disease when affected patches of skin often go unnoticed, and the unpredictable pattern of infection among exposed persons (62). Discovery of such cases is now occurring through the examination of school children. For example, the Muttathur Leprosy Centre conducted a survey of 30 schools in the South Arcot district of the state of Madras, attended by a total of 3,656 children 6 to 12 years of age. Over 400 cases were discovered, an incidence of 11%. Fortunately, there were no lepromatous leprosy cases; the less serious tuberculoid cases are practically non-infectious and much more easily cured than the other type. A treatment program was immediately organized, with four workers assigned to visit the schools the first week of each month to distribute medicines and examine the children. The fact that the affected children continue in school indicates that no stigma is attached to them. Such school attendance is possible whether the child is adopted by relatives, treated along with his parents in his own home, or sent to a resident institution for needy children (104).

The state of Maharashtra, a leader in provisions for those with leprosy, has 20 institutions of which half are operated

by the government. There is also the Greater Bombay Leprosy Control Scheme in which the efforts of the state and municipal governments and the Gandhi Memorial Leprosy Foundation are coordinated. Probably about 14,000 leprosy patients need rehabilitation services (370):

Place	Total Number in Group	Proportion Needing Rehabilitation	Number Needing Rehabilitation
Colonies (patients in)	4,000	50%	2,000
Day-patients	80,000	5%	4,000
Beggars	6,000*	100%	6,000
Still unknown and still in homes	210,000	1%	2,100
Total	300,000	4.6%	14,100

The Mayor of Delhi has pointed out that though Delhi has no special problem of its own concerning leprosy, many affected persons come in from other states to take advantage of the services available. At present about 600 patients are receiving treatment in various institutions, of whom 400 are being treated in a local leprosy colony. Training is given here in various handicrafts, and recently a plastic and reconstructive surgery unit and physiotherapy were added (39).

For the medical treatment of leprosy patients in India as a whole there are about 173 leprosy control units and 694 leprosy Survey, Education, and Treatment (S.E.T.) centers. The staff members search out cases, visit contacts of the cases, teach early care, and give treatment in the form of medicine. There is often a paramedical worker who can put on plasters for ulcers and give some finger exercises for patients. Since the S.E.T. units move about, close down, and then start up again at various times, it is difficult to give a definite total for them. A Control Unit is more or less like an S.E.T. unit. The Special Leprosy Officers are government officers.

The S.E.T. Units were first established in Maharashtra more than ten years ago. But these 30 units have difficulty in attract-

*Calculated at the rate of 2% of 300,000.

ing trained workers, since many do not find such work interesting or rewarding. Even the introduction of D.D.S. tablets has had limited impact because many patients gradually discontinue their use (93).

The provision of adequate medical services is complicated by the length of time needed for treatment. Most leprosy patients can be cured or declared arrested after two or three years of treatment, with the aid of the D.D.S. pill; but some cases of leprosy require up to seven years of treatment, and occasionally treatment must be continued throughout a person's life (84). For the less serious forms, tuberculoid and indeterminate types of leprosy, two years of treatment are needed, but double this period is necessary for the lepromatous and intermediate forms. Early use of medication results in a cure for 95% of the cases. A more rapid and effective drug is still being sought (62, 240b).

The sulfone drugs used daily as treatment for leprosy are usually administered directly by the patients to themselves; a one-week supply is all that is given at one time, and the patient must come to a designated spot in order to pick up the medication or to get an occasional medical check-up.* Many patients walk miles to get to this location. If the patient has ulcerated feet or foot deformities, this is difficult for him. Toes and fingers may literally be chewed away by rats, ants, and cockroaches during the night without the patient's being aware of what is happening, since he has lost feeling in his feet and hands.

Services are needed to supplement the medication and should be brought more directly to the patient. Special vans sent to particular areas, equipped to do both physical therapy and occupational therapy, make splints, make plasters for foot cases, etc. could relieve pressure on clinics in rehabilitation centers and provide follow-up services. These van services could also treat other handicapping conditions (328).

* It was once thought that two or three tablets of the dapsone drug were needed daily, but one a week is now regarded as sufficient. The small dosage reduces the likelihood of adverse side effects (62).

The use of dapsone and other sulfone drugs, by arresting the course of the disease, has encouraged experimental work in plastic surgery to develop techniques for repairing and reconstructing saddle noses, claw hands, dropped feet, and paralyzed eyelids (62). Considerable surgery of this kind is done in the Tata Department of Plastic Surgery at the Sir J.J. Group of Hospitals in Bombay, and at the Christian Medical College and Hospital at Vellore. Patients may also need secondary treatment for accidental injuries and infection, particularly of the hands and feet, incurred as a result of the deterioration and anesthesia of the peripheral nerves, and the loss of protective sensations (372). Improved types of medical treatment may also limit the extent of deformities developing in advanced stages. Now the importance of careful and continuous cleansing of the leprosy patient's nose during and after his anti-leprosy treatment is stressed for preventing nasal deformities (112).

Suitable prosthetic appliances alleviate the difficulties imposed by the disabilities of leprosy deformities. Pioneering work started in 1949 concerning surgical treatment demonstrated that: (1) the paralyzed hands and feet and damaged faces of leprosy patients can be surgically corrected; (2) patients with reconstructed hands and feet can learn to use tools skilfully without injuring themselves; and (3) leprosy patients can be taught a trade by which they can earn a living (402, 403). The development of functional appliances for leprosy patients has lagged until recent years, and the supply is still too limited to meet the need, the cost is too high, and the distribution point is usually too far from the patient's home (403).

The Christian Medical College and Hospital in Vellore has a new physical medicine and rehabilitation building located next to the main hospital with the basement equipped as an orthotic, shoe, and prosthetic shop. Special types of prostheses are necessitated by the Indian custom of removing shoes when entering a house. Dr. Paul Brand, the head of this program, developed special shoes and prosthetic extremities such as the so-called "leprosy shoe." This shoe became such a distinctive mark of the leprosy patient in South India that it became a stigma to

the patient, who often found that he could not get a job as long as he was wearing such shoes. As a result, Dr. Brand started to wear the shoes himself, and the habit then spread to other members of the South Indian community, so that their use does not necessarily stigmatize the wearer. A "rice paddy limb" with a flared lower end which prevents the wearer from sinking very far into the mud when working has been helpful in some cases.

Medical treatment for those with leprosy is gradually being integrated with general medical services. In 1953 the WHO Expert Committee on Leprosy officially disapproved of compulsory segregation of leprosy patients, though this stand was in conflict with the implicit assumptions made in an International Christian Leprosy Conference held that same year in Lucknow, India. A concurrent study carried on in Brazil later led to the conclusion that segregation procedures were ineffective in controlling the prevalence rates for leprosy. Slowly the concept of rehabilitation without segregation has gained acceptance in India.

At the Christian Medical College and Hospital in Vellore, this integrated care has resulted in a steady diminishing of fears in other patients associated with leprosy patients. Originally a special rehabilitation program was established for leprosy victims alone, but after a few months other handicapped persons requested these rehabilitation services. Their incorporation into the program helped to break down local prejudices and fears concerning leprosy (386). Now a hostel for out-of-town leprosy patients is situated in the center of the community where they can stay while being prepared for surgery. Neighbors know about their condition, and take an interest in the progress of their medical treatment.

In Vellore, India, the integration of the treatment of leprosy with that of other diseases in the Medical College and its outclinics was one of the most effective methods of changing public opinion (480).

The establishment of a leprosy rehabilitation center here, the matter-of-fact acceptance of people with leprosy by medical

personnel and social workers, and the sight of ex-patients at work, all provided a living demonstration of how leprosy should be regarded. The medical center practices exemplify those recommended at the Scientific Meeting on Rehabilitation in Leprosy held there in 1960, which urged that leprosy research be conducted as part of comprehensive medical research programs (480).

It has further been recommended that all existing leprosaria in India could serve the cause of rehabilitation by becoming centers for reconstructive surgery where there is proper personnel and equipment, training centers for physiotherapy technicians, re-education centers and craft training centers, and sheltered employment centers for severely disabled patients (404).

The greatest rehabilitation need is for trained personnel rather than for buildings or equipment. Leprosy-related training is needed by: (1) every leprosy worker, who should understand the basic principles of rehabilitation; (2) physiotherapists and auxiliary physiotherapists; (3) surgeons, who need to know reconstructive techniques; and (4) social workers, who may act as placement officers, as liaison between home and village, and as vocational instructors. For example, at a hospital in Champa a social worker gets in touch with the family of each leprosy patient immediately after his admission, encourages them to keep in close touch with the patient, and later helps in the period of transition from hospital to home (168a).

Because of the shortage of trained physical therapists, many leprosy treatment centers use other paramedical workers to give simple forms of treatment and exercise. The title of Rehabilitation Officers which has been suggested for these workers has met objection as being too ambitious and even dangerous because the public might be misled into considering their services equivalent to those of a qualified physical therapist.

The contributions of therapists and social workers to the process of medical rehabilitation are only gradually coming to be recognized. A Scientific Meeting on Rehabilitation in Leprosy, organized jointly by the WHO, the Leonard Wood Memorial, and the International Society for Rehabilitation of the Disabled,

was held at Vellore, South India, in 1960. At this meeting personnel such as physical therapists, occupational therapists, and medical social workers were not represented. However, they did participate in subsequent meetings in Madras and in Delhi, and this indicated progress in the development of the concept of a team approach of many specialized workers in solving the problems of rehabilitating leprosy patients (187).

The magnitude of the problem of leprosy in India, which makes it impossible for medical personnel to assume entire responsibility, has led to suggestions for up-grading the ancillary workers. Some prefer the term non-medical supervisor to that of paramedical worker, because they believe the latter term implies a function and level of competence close to that of the medically trained person. Such supervisors are needed in case detection, health education, and record-keeping. They need as much medical information about leprosy as possible in their training because in many of the S.E.T. Units they must actually carry on considerable medical treatment, when the medical officer in charge may have little interest in this type of work, or has had little specific training related to leprosy, or simply cannot carry the caseload alone (452).

Case-finding and treatment must be incorporated into the activities of all professional personnel doing general medical work. Most Indian physicians will not apply for the full-time jobs with leprosy patients that have been authorized. This leaves the major responsibility to doctors in general practice, who if they are leprosy-conscious can easily examine a patient for patches or skin changes in the course of a routine examination made for other purposes. Also patients going to general practitioners are not identified as leprosy patients as they would be if they sought treatment at a leprosy clinic. Leprosy patients may even remain undetected and untreated if a leprosy clinic is all that is available. Medical schools should admit leprosy-affected persons to their associated hospitals, and provide refresher courses on leprosy treatment for physicians. Intensive health education is urged as part of a leprosy control program in a community to encourage individuals to report suspicious symptoms to the

family doctor. Integration is a key word in the treatment of those affected by leprosy (472).

At the international leprosy conference at Wardha in 1967 objection was raised to the use of the name "Rehabilitation Centre" for a place providing services for leprosy-affected persons. The term "Settlement" was considered preferable, although it was believed that even this term would still convey an undesirable impression. Apparently the title "Rehabilitation Centre" conjured up a picture of a separate and isolated treatment centre which would further emphasize the artificial separateness imposed by prejudiced social attitudes. It was stressed that there is still need for two types of centers for leprosy patients such as a "Rehabilitation Training Centre" for short-stay patients and a "Sheltered Workshop" where the patient works by the day. Such facilities would help to meet the need for in-patient and out-patient services as yet unobtainable by patients isolated in a colony or leprosarium, a kind of cultural island sponsored by a public or private agency or formed without help or supervision by the patients themselves in the so-called "free colony."

Vocational Problems

Medical rehabilitation for leprosy patients has progressed more rapidly in India than *vocational* rehabilitation (402, 403, 404). Vocational rehabilitation of leprosy-affected persons involves work appropriate for them which can be classified in terms of the degree of infectiousness of leprosy in the individual concerned, the nature and extent of the contact the patient has with other people in the job situation, the nature of the limitations imposed by leprosy, and the patient's ability to adjust to these limitations. The limitations imposed by the condition of leprosy can in some instances be altered by special medical treatment, surgery, and special safeguards and appliances. Integration into the world of work necessitates also a clear understanding of the common profound psychological, social, and economic effects of the condition of leprosy upon the individual. The success of efforts to return a leprosy patient to the normal community depends in part on the attitudes existing in a particular community and

on the previous occupation of the person with leprosy. In some instances only gross disfigurement produces ostracism, whereas in other instances the earliest indications such as an anesthetic skin patch will lead to rejection by family and community. Stigma is pronounced in communities with a high level of education and sophistication. Persons who have been engaged in agricultural pursuits are usually handicapped less by the disease than those in white-collar jobs.

Factors to be considered in determining the rehabilitation potential of a patient include: attitude toward rehabilitation; personality and habits; social attitudes; desire to work; desire to learn; work habits; ability and intelligence for learning and working; steadiness in work; general physical fitness; status regarding anesthesia and deformity in relation to particular jobs; and the patient's appearance from the point of view of his social acceptability. Once rehabilitation is undertaken, some additional questions need to be asked: Can the patient continue his previous occupation? Does he need aid in the form of physical therapy, occupational therapy, surgery, medical treatment, and social services? After training will it be possible to place him in self-employment, assisted home employment, open employment, or a sheltered workshop?

If a new kind of work is to be undertaken, the selection of a suitable occupation with the aim of making the leprosy patient self-supporting depends on: medical suitability of the occupation in terms of the patient's physical condition; wage-giving capacity of the occupation; the person's ability to handle the occupation; the employment potential of the occupation; and training facilities for the occupation.

Participants in a 1967 international conference held in Wardha maintained that rehabilitation services need to be coordinated under the Government Department of Social Welfare, headed by a well qualified Rehabilitation Officer directing a Placement Officer, a Marketing Officer, and a number of social workers. Rehabilitation Training Centres should function independently of the Rehabilitation Officer but cooperating with him. A center

should have a surgical unit nearby working with the Rehabilitation Officer and the staff of the center. Separate rural and urban Rehabilitation Training Centres are no longer needed, since industries are now moving into rural areas. A first step would be the expansion and adaptation of existing appropriate in-patient institutions. No special legislation concerning persons with leprosy was recommended for it was believed that such provisions should be included in general public-health regulations and that existing legislation should be modified which does not conform with modern medical concepts of the disease.

Rehabilitation must avoid too narrow a vocational interpretation. Giving a patient a job as an errand boy at a leprosy colony is not rehabilitation. Teaching a woman patient to weave cloth is not rehabilitation. Giving a man some improved farm implements is not rehabilitation. Why not? These may be a part of rehabilitation process, but in themselves they are not rehabilitation. The two should not be confused. Rehabilitation refers to the fullest use of a person's capacity within the normal societal condition (168c).

The vocational obstacles faced in the vocational rehabilitation of leprosy patients are numerous:

1. The danger of infection to the public, which must be clearly and carefully determined to give reassurance to the public.
2. Public fear of leprosy, which makes necessary intensive propaganda to convince governments and industrial organizations that slight or corrected deformities should not prevent a patient from holding a job. Negative attitudes or lack of understanding on the part of potential employers may prevent the leprosy patient from demonstrating his capacities (93).
3. Stigma associated with the deformities of leprosy, such as the claw hand and saddle nose and trophic ulcer on the foot, which underlines the importance of plastic reconstructive surgery.

In addition to these obstacles presented by the social environment of the leprosy patient there are others arising from limitations in the patient himself.

1. Physical limitations imposed by leprosy-associated disabilities.
2. The lack of adequate education and training for work or for a different kind of work from that formerly performed.
3. Lack of capital on the part of the leprosy-affected person, which necessitates government aid for small-scale and cottage industries.
4. Unfortunate patient attitudes such as despair and hopelessness. It may be difficult to get his cooperation, for he may be apathetic, over-dependent, rebellious, hostile, or accustomed to vagrancy and begging (93, 195, 403).

Since loss of sensation is the greatest single disability of a disease-arrested leprosy patient, he must be taught special care of his anesthetized hands and feet to avoid injury while working. He often needs special adaptations of equipment, and retraining in the use of agricultural and carpentry tools, to make it possible for him to return to his customary work while taking into account the dangers and limitations imposed not only by deformity but by limb anesthesia itself (478).

The person with leprosy faces the dilemma of being denied normal employment opportunities because of disfigurement or deformity, and yet his low-income illiterate family—and this would characterize many Indian families—is unable to support unemployed members. At the same time, the residual disabilities persisting beyond medical treatment often interfere with his attempts to find gainful employment (403). It is variously estimated that from 20% to 25% of leprosy cases have primary deformities of the face, hands, and feet, but many also have secondary deformities resulting from careless use of anesthetized extremities (404).

A recommended employment classification of leprosy patients is as follows (473):

1. Infectious cases, 20%. While isolated and treated in his own home, the patient should be trained in some suitable craft or industrial skill in special training centers for this group.

2. Non-infectious cases, 80%. Their degree of incapacitation can be classified as follows:

- a. No anesthesia or deformities of hands and feet. These can work at any job available for normal people.
- b. Anesthesia of hands and feet but only minor degrees of deformity. These also can work at any normal jobs in which there is no risk of further damage to their extremities, perhaps with specially modified tools.
- c. Fairly advanced deformities of hands and feet but able to work with about 50% to 70% efficiency. They can do regular work with the same precautions as for the above group.
- d. Crippling that prevents their doing any work. They do not need custodial care, however.
- e. Complete crippling that prevents work and also requires custodial care. In the last two groups, some are in colonies and some are in their own homes.

Basic to the vocational problems of the leprosy patient is the limited opportunity for education. Even the non-infected children of parents with leprosy are still not permitted to attend regular schools, although other Asian countries like Hong Kong and Singapore now integrate in the public schools both these children and those in whom infection has been arrested. It was not until the passage of the Delhi Children's Act that two schools for non-infected children whose parents have leprosy were established in Delhi. The primary provision for the children continues to be separate institutions or homes, although some authorities maintain that it is a step backward to establish any more homes of this kind, since it would do harm to the cause of integrating those suffering from leprosy into the normal world. The experience of Brazil, which had provided Preventoria or homes for about 5,000 such children, was that they were stigmatized by such separation and became misfits in the normal world. These institutions are now being converted there into general child care centers. A growing opposition to such homes is developing in India, where the recommended procedure is to provide D.D.S. prophylactic for the

parents while permitting the child to live with a relative or friend, and where this is not feasible, keeping the child in a general care home. If these alternatives are not available, the child may be kept with his parents while they themselves are under treatment (473).

Even when some form of education is available, patients who develop leprosy at an early age may lose several years of education while undergoing treatment. Extension of the age limits for entrance into training or employment has been recommended for these patients (92). Most of the leprosy patients who are evaluated for vocational purposes have had no education at all, and may also have difficulty in getting employment in regular industry because of age limits set by factory and union rules. Therefore it has been necessary to explore possibilities of employment in small-scale industries which stress production rather than precision skills, or to explore trades in which groups of trained rehabilitated persons can form their own cooperatives or start their own shops (343).

Employers are reluctant to hire persons with arrested leprosy for various reasons:

1. They themselves may be repelled by the visible deformities.
2. Co-workers may object to the presence of those with obvious deformities.
3. They may be concerned about the accident proneness caused by anesthetic limbs and the resultant demands for compensation.
4. Ordinary employment may be difficult for the person with anesthetized hands or feet.
5. Such work may actually be harmful for the person.

Some Institutions encourage hard and heavy work even for deformed patients apparently because they can do it. The tragedy of leprosy often is that they can do it while they should not (195).

The Gandhi Memorial Leprosy Foundation in Wardha initiated a project at Malegaon to see whether powerloom industry would be suitable for leprosy patients who have not only anesthesia but also deformities in hands and feet. Two more projects were undertaken to determine the kinds of industrial jobs suitable for those with leprosy. The Tilak College of Education of Poona, which has a special vocational section, investigated 21 industries in and near Poona in 1963. In another study a paramedical officer visited five heavy industries, including a shipyard, a steel company and a fertilizer company, to examine each job and determine which were suitable for leprosy patients.

Attempts are sometimes made to incorporate these exploratory efforts into existing government programs to encourage local industries. The government of India has divided all the rural areas of the country into developmental units called "Blocks," and in each Block the development officer encourages and helps the people to engage in various occupations and industries which make the community more self-sufficient. Both consultation and financial aid are available (169c).

A vocational rehabilitation program has grown out of an early project of the Swiss Basel Mission, which introduced social welfare work for persons suffering from leprosy in Malabar in 1891. Until 1900 it had the support of the Calicut municipality, after which the Leprosy Mission took over the work. In 1901 this mission began the construction of a Home for 25 patients on the site of the present Leprosy Hospital at Chevayur. This Home began operations in 1903, and was one of the first such institutions to have a resident Medical Officer, initially appointed in 1918, when very little was known about leprosy. Additional wards were donated by various individuals as well as the Commonwealth Trust, which provided other services in addition. Now a modern sanatorium, its services include vocational training in tailoring, knitting, weaving, shoe-making, carpentry, poultry farming, silver work, and agriculture. Money paid the patients for the work they do accumulates to make possible on discharge the purchase of equipment needed for establishing themselves in a trade

in their home surroundings, either individually or with pooled resources in a cooperative.

The Faizabad Leprosy Home established near Faizabad on the Allahabad Road in 1938 by the Leprosy Mission has 353 patients, including 80 women and 102 children, who get free treatment, in addition to 40,000 out-patients who receive medical care each year. The World Council of Churches and the United Methodist Committee for Overseas Relief provided 50,000 rupees for an irrigation and agriculture project that made a 40-acre tract of land productive and the center self-sufficient (198).

An experimental effort to train and employ leprosy patients has been reported by an employment officer at the Tata Department of Plastic Surgery in an SRS-supported project for the rehabilitation of patients with leprosy or with burns in the Sir J. J. Group of Hospitals in Bombay. A random sample of 1,000 leprosy patients from the out-patients of Acworth Leprosy Hospital, Bombay, and its clinics in the city of Bombay was selected for the research project on leprosy, and 1,300 cases admitted to four hospitals in Bombay over a year's period from May 1964 to May 1965 were selected for the project on burns. Rehabilitation included: vocational assessment; appropriate surgery, footwear and adapted tools; training in the care of anesthetic limbs; vocational training either in technical training institutions or on the job in the training-cum-production center started by this project.

By the time the article was written, six patients had received free training in technical trades, as machinist, fitter, and carpenter, and the training institute had granted them a stipend. This was the first time that ex-leprosy patients, some with deformities, had been admitted to a government training center to study among normal students. Others were admitted (both leprosy and burns cases) to a training-cum-production center which undertook subcontracting work from industries, where they earned a stipend; this program was started in November, 1965. The amount of subsidy needed for its operation decreased steadily. The center was to be shifted to Badlapur, where it was proposed that these crafts be started: tailoring, embroidery, printing, woodworking, manufacture of

hollow and bifurcated rivets, and manufacture of builders' hardware. Assistance was given in finding open employment thereafter, starting with allaying the fears and apprehensions of employers. This was necessary since the special employment exchanges for the handicapped provide for the blind, deaf and orthopedically handicapped, but not leprosy or burns cases. Hostel facilities are needed (92).

At Anandvan, Warora, Maharashtra State, patients in a leprosy institution have been rehabilitated to the point of employment on land, in small factories, in building construction, and in other activities. A college was established, affiliated with Nagpur University, which is attended by both cured leprosy patients and normal young people. Agricultural work is stressed, and students do collective work at the college.

The sheltered workshop is still needed at this stage in provisions for leprosy patients in India (195). About 30 sheltered workshops and training centers run by voluntary agencies try to provide leprosy-affected persons with partial employment as an alternative to begging (326,329). Some training and employment are available in special beggars' homes, such as the Chembur home where they learn shoe and sandal making, the home in Anandgram, Delhi, where vegetable growing has been attempted, and in other places where spinning and weaving are commonly found.

To diversify their work and enable them to handle jobs related to open employment, many efforts are being made to explore the possibilities of industrial operations that leprosy patients could perform, and of a greater range of marketable products such as candles and leather gloves (346), and paper mache articles (326).

Till recently workshop programs for those with leprosy have concentrated primarily on cottage industries such as weaving mats and making toys, but attempts are being made to expand and diversify these programs to include regional industries such as spinning and weaving, manufacturing industrial components under a sub-contracting system, repairing equipment, manufac-

turing and marketing workshop products, and providing business and maintenance services (404).

Good workshop-plus-training centers are essential in the rehabilitation of those with leprosy. They need to be integrated with other programs of rehabilitation and supported by a pooling of public and private funds, in order to produce the most effective rehabilitation services.

The Poona District Leprosy Committee surveyed 306 adult in-patients at the Dr. Bandorawalla Leprosy Hospital at Kondhwa near Poona, 104 in-patients from the Sassoon General Hospital, and 40 adult out-patients from the Gadikhana Municipal Hospital to assess the vocational and social effects of the disease and to suggest appropriate rehabilitation procedures. The types of rehabilitation required for these patients were classified as sheltered, institutional, and social. It was recommended that persons in the first two categories should be regarded as appropriate subjects for vocational training, adapted if necessary, which could lead eventually to open employment with or without the intermediate step of a sheltered workshop (486).

Finding housing even when a job is available is difficult. Housing is a serious problem in most larger communities because even with special departments for allotting houses to the needy, officials may discriminate against leprosy patients. Leprosy should not constitute a barrier to receiving a housing allocation (92).

Some help in vocational rehabilitation is provided by voluntary agencies from other countries. For example, the Swedish Red Cross Leprosy Campaign operates a factory at Katpadi, near Vellore in South India, for persons handicapped by leprosy and other conditions, who are employed in a workshop performing light engineering work such as making parts for the Halda typewriter.

Persons with leprosy are now taking the initiative themselves in providing vocational opportunities for their group in India. Effective cooperatives have been formed in some instances, whose

very existence gives hope to others affected by the disease (223a). The village of Anandwan in Maharashtra State is run on a co-operative basis by leprosy settlers. Most of the people had been wanderers and outcasts for many years before joining the settlement. With the guidance and inspiration of an Indian lawyer who has made this his life's vocation, they have organized a number of cottage industries, each owned and operated by a small cooperative. Agricultural products in excess of community needs are sold, and commercial ties have been established with nearby villages. The settlers come and go freely, and many people come in from the surrounding area to do business with them, and to share cultural and social occasions (168a).

An adequate rehabilitation program for patients with leprosy must therefore take into account a variety of factors (403, 404):

1. *Economic.* The patient must have an income sufficient to support himself and sometimes his family as well.
2. *Medical.* The patient may need reconstructive surgery, instruction in the proper care of his extremities, appropriate choice of occupation after reconstructive surgery, and replacement of anesthetized parts of the hands with patches of normally sensitive skin.
3. *Psychological.* Rehabilitation must begin immediately after diagnosis is made to assure a positive adjustment to this new realization and the maintenance of self-confidence and self-respect. Fatalistic acceptance of leprosy as a punishment inflicted by God must be discouraged.
4. *Educational.* Most patients lack formal education because the visible deformities resulting from the disease force them to leave school, or when they are segregated no schooling may be provided. When the visible manifestations occur later, advanced education may be interrupted. So a broad range of educational needs may be found in any group of such patients.
5. *Social.* The person with leprosy needs to be accepted both by his family and by his community, with opportunities for social experience and recreation. He needs the opportunity for normal participation in community life and for regular employment.

6. *Vocational.* When even among the ablebodied and vocationally trained unemployment is high, it is small wonder that an unusually high rate exists among those with leprosy. Since the government can provide few jobs specifically for them, and competition with the ablebodied presents many difficulties, the only solution is usually some form of sheltered employment.

To meet these needs, the many suggestions offered may be summarized as follows (224, 403, 404, 436):

1. Adequate fact-finding procedures to determine the numbers needing services.
2. Intensive case-finding to make possible early detection and treatment before the disease produces disabilities.
3. Provision of adequate educational opportunities, in regular schools wherever possible.
4. Full evaluation of a patient's condition and potentialities.
5. Physical restoration to improve his physical and mental functions, through adequate medical and surgical treatment as needed, made available in non-segregated settings.
6. Treatment in or near the home, with follow-up checks on the proper intake of prescribed medication.
7. Counselling services in various settings where the patient comes into contact with other people.
8. Emphasis on emotional rehabilitation, as through family casework services.
9. Substitution of objectives of social and vocational adjustment for more limited medical or custodial objectives.
10. Integration of work with the leprosy patient at the levels of the hospital and general practitioner, with seminars, refresher courses, and conferences to acquaint the medical profession with all aspects of leprosy.

11. Cooperation between the medical profession and various public and private agencies in a program of public education to give people more information about and more positive attitudes toward leprosy.
12. Provision of appropriate vocational training.
13. Placement in a suitable job, with follow-up services to assure a continuing successful adjustment, through coordinated public and private efforts.
14. Expansion of employment opportunities in both sheltered workshops and the open labour market, and a concomitant change in employer attitudes.
15. Encouragement of research and publicizing of research findings by organizations concerned with the leprosy patients.

There fortunately is an increasing public awareness of and concern about the problems of leprosy patients in India. A milestone in public acceptance was marked in the 1965 celebration of the World Day for the Disabled in Bombay, in connection with which the Bombay Committee arranged to have a Tea Party and Open House at Government House to which persons suffering from the crippling effects of leprosy were invited with those having other handicaps. This was believed to be the first occasion when persons affected by leprosy had been invited to and were a part of a social gathering of this kind. To celebrate the 1968 World Day of the Disabled in Amravati, a local leprosy organization and the Amravati Women's Central Organisation together arranged a public meeting which was attended by several leprosy-negative women patients from an institution (177).

The World Day for Leprosy Sufferers was originated in 1954 by Count Raoul Follereau of Paris, founder of the Order of Charity. The day is now observed in more than 100 countries, and has been endorsed by world leaders (384). Although the World Day is specified as the last Sunday in January, it is always celebrated in India on January 30 or 31 in conjunction with the Mahatma Gandhi Martyr Day, because of his concern for those suffering from the disease. Indian observances of this day

are found each year in a steadily increasing number of communities and institutions.

The National Leprosy Organisation, India, urged that leprosy control work as well as community health education work be intensified during the Gandhi Centenary Year (he was born Oct. 2, 1869) (240). In commemoration of this year, a "Conference for Gandhi Centenary" was held in November 1969 in Wardha, preceded by regional meetings in a number of states. The National Leprosy Organisation requested the issuance of a special commemorative postage stamp depicting Gandhi attending a leprosy patient. International groups were asked to observe World Leprosy Day to coincide with Gandhi's Martyr Day. The NLO itself issued stamps on leprosy (307).

There is evidence of continuing progress in the efforts to control and treat leprosy. Two decades ago there were only about a hundred workers in this field in India, but now there are more than a thousand. Leprosy, as indicated earlier, is now becoming part of the normal work of hospitals and physicians (39). The National Leprosy Control Programme gained momentum in 1969 when the central government agreed to provide 100% rather than 50% grants to individual states for projects of this kind. It was reported by the Minister of Health and Family Planning in 1969 that 72,000,000 of a total of 300,000,000 persons "under risk" had been placed under treatment. It was also reported at a 1969 conference held at Rashtrapati Bhavan that there were at that time 180 Leprosy Control Units and 1,130 Survey, Education, and Treatment Centres in operation throughout the country, with 36 voluntary organizations participating in the government-aided Leprosy Control Programme. Significant work has been done by the Schieffelin Leprosy Research Sanatorium at Karigiri, the Gandhi Memorial Leprosy Foundation's chemoprophylaxis project at Bobbili, and the Leprosy Hospital-cum-Referral Centre at Wardha (238). Important research is being conducted at the Leprosy Research and Teaching Institute at Chingleput, Madras, sponsored by the central government, and by the Leprosy Department of Calcutta School of Tropical Medicine (62).

Help for leprosy patients in India often comes through the concerted efforts of various international organizations concerned with the disease. The three major voluntary agencies in the U.S.A. with this special interest are the Leonard Wood Memorial, emphasizing medical research; American Leprosy Missions (the chief instrument of American Protestants in Aid to Victims of Leprosy), emphasizing the support of treatment facilities; and the Damien-Dutton Society which provides medical, research, and rehabilitation services under Catholic auspices. The International Society for Rehabilitation of the Disabled has also stressed the importance of rehabilitation services for persons with leprosy through its Committee on Leprosy Rehabilitation, established in 1960 at its Eighth World Congress in New York City. Even prior to the formation of this committee the ISRD had taken the initiative in this field by sponsoring an expert committee and study group to report on the situation regarding leprosy rehabilitation and the possibility of using reconstructive surgery for the deformities of leprosy. In collaboration with the Leonard Wood Memorial and the World Health Organization, a meeting was held by this group at the Christian Medical College in Vellore, and the report issuing from this conference was widely circulated and used to reinforce the efforts of many organizations concerned with leprosy victims (181a). The World Health Organization has also cooperated with UNICEF in assisting the leprosy control program in India by focusing attention on the training of leprosy workers. WHO stimulates and coordinates work concerning leprosy by cooperating with the Indian Council of Medical Research and with the Central Leprosy Teaching and Research Institute at Chingleput which trains leprosy workers (238).

Research and pilot demonstration projects aided by Social and Rehabilitation Service of the U.S. Department of Health, Education, and Welfare include six projects specifically focused on leprosy in the 1969 list of SRS grants (241):

Christian Medical College and Hospital, Vellore. To investigate methods for the rehabilitation of persons disabled by leprosy.

Christian Medical College and Hospital, Vellore. To develop and apply occupational orientation in the reconstructive surgery and rehabilitation of leprosy patients.

Postgraduate Research Labs., J. J. Group of Hospitals, Bombay. To study the clinical, physiological, and pathological aspects of nerve lesions in leprosy.

Schieffelin Leprosy Research Sanatorium, Karigiri. To evaluate the efficacy of rehabilitation of leprosy patients in a comprehensive leprosy control program involving re-education and resettlement concurrently with medical and surgical care.

Tata Department of Plastic Surgery, J. J. Group of Hospitals, Bombay. To establish a comprehensive rehabilitation research and demonstration program for leprosy patients in an urban population. (Another project in this department aims to develop methods for rehabilitation of both burns patients and those deformed by leprosy.)

Poona District Leprosy Committee, Poona. Rehabilitation of leprosy-handicapped persons in agro-industrial occupations. (Approval by Government of India pending.)

Another project, at Father Muller's Charitable Institutions in Mangalore, is seeking to demonstrate integrated medical and vocational rehabilitation of medical, surgical, TB, leprosy, and psychiatric patients in a single setting.

Conferences on the subject of leprosy also focus attention on the needs of leprosy patients and their potentialities for rehabilitation. The first All India Leprosy Conference was held in 1947 at Wardha, long associated with the work of Mahatma Gandhi, who initiated much leprosy work but who felt that it remained one of his uncompleted tasks. Meetings at Wardha are increasingly international in scope. A Regional Seminar was held there in 1967 for an exchange of ideas and experiences among representatives of countries in Southeast Asia and the Western Pacific.

The conference was sponsored by the International Council on Social Welfare and the Gandhi Memorial Leprosy Foundation, with the theme of "Rehabilitation of Leprosy-Affected Persons as an Emerging Concept." The 11th All India Leprosy Worker Conference and 8th Conference of the Indian Association of Leprologists were held in Delhi in February 1969 (39). International conferences which have likewise emphasized the needs and problems of leprosy patients have been the 1968 International Leprosy Congress held in London (237), and the International Leprosy Symposium held at the U.S. Public Health Service Hospital in Carville, Louisiana, under the sponsorship of American Leprosy Missions in cooperation with the Hospital. About 50 medical workers from Asia, Africa, and North and South America took part in the Louisiana conference. Since this series of seminars was inaugurated ten years ago, about 400 persons have attended (181).

In countries where large numbers of people still suffer from preventable diseases, rehabilitation has a low priority, and naturally this affects the development of rehabilitation services for those with leprosy. People must be made to realize that rehabilitation is not secondary to but must be an integral part of a total program of medical and public health services. What is lacking usually are the necessary funds, personnel, and drive toward rehabilitation. The rehabilitation of the leprosy patient requires changes of attitude on the part of the public, the medical profession, and the patient himself (195).

Chapter 10

THE MENTALLY RETARDED

The provision of services for the mentally retarded in India is a recent development. Some of the mentally retarded have in the past received custodial care of a sort, but as part of an undifferentiated group of sick, indigent, and handicapped persons who were given a minimum subsistence.

The mentally handicapped person is defined as one with an irreversible condition of low mentality classifiable in the four categories of slow learner, educable mentally handicapped moron, imbecile, and idiot. Only the slow learner is considered capable of benefiting from education in regular school classes, and then only with much individual attention and special assistance. Special schools are generally regarded as preferable even for slow learners, though they are not economically feasible except in large cities. Special classes in the regular schools are regarded as a less desirable alternative solution (150). This contrasts with the widespread conviction in western countries that the maximum benefits are achieved through a program of integrating the mentally retarded with normal children.

It is considered unfortunate that in India the Ministry of Education has no responsibility for even the educable level of this group (245). Thus one administration for the education of the handicapped in the central government deals with the problems of the mentally retarded only as part of those of the blind, deaf, and orthopedically handicapped (245), with the implication that all

categories of the mentally handicapped as well as these other groups need provisions apart from normal children.

Estimates of the incidence of mental retardation in India vary widely, depending in part on the definitions used. The term "mentally deficient," in the sense that "the mental subnormality is attributable primarily to a demonstrable defect of brain-structure or chemistry," is estimated to include 3,000,000 persons on the basis of percentages found in other countries. The age period from five to 19 provides the largest frequency and therefore constitutes the greatest problem (368). Out of every hundred mentally deficient persons, 25 need custodial care and 75 are potentially educable to different levels of useful social functioning. Incidence is higher in rural areas (10.4 per 1,000) than in urban areas (6.7 per 1,000). Persons from higher socioeconomic strata contribute a larger number of severe grades of defectives to the population than do those from lower strata. At the same time, the lower strata produce a larger number of the high-grade defectives called feebleminded and dullards. These are often called the "garden variety" of mental defectives, or "subcultural" mental defectives.

A study conducted in a multi-purpose higher secondary school in Ranchi revealed that 34% of the pupils of the school belonged to the category of mild subnormality or borderline subnormality, that is, with an IQ between 60 and 90. This contrasts with the results of a survey made of the incidence of mental retardation among children enrolled in the schools in the city of Madras in 1961-62, where a 10% random sample of the 9,773 pupils in 47 schools revealed only 14 cases with IQ's below 70 (229).

Though no large-scale surveys have been made in India to indicate the overall incidence of mental subnormality, the rates prevalent in Scotland suggest that in India there may be 13,000,000 to 14,000,000 persons who are mildly subnormal. In this group there are probably between 5,000,000 and 6,000,000 pre-adolescents, adolescents, and adults under 25 years of age, whose vocational rehabilitation represents a pressing problem (44). The larger figures indicated in this study as compared with the previous estimates are undoubtedly related to the broader range of I.Q.'s included and the lack of distinction between organically based and culturally derived retardation. The leaflet announcing

the 1966 conference on mental retardation estimated that there are between 3,000,000 and 4,000,000 mentally retarded children in India.

Incidence rates (2% to 3%) applicable to western countries provide estimates ranging from 10,000,000 to 15,000,000 mentally retarded persons in India. These figures would indicate that a Ministry of Education estimate of 1,400,000 mentally retarded children of school age (5 to 14 years) may be too low. Since roughly 40% of the general population are said to be under 14 years of age, this percentage of a total group of 15,000,000 mentally retarded persons of all ages would mean that there are 6,000,000 mentally retarded children of whom more than 1,400,000 would fall into the school-age group.

Taking into account predisposing factors such as poverty, malnutrition, and lack of education, a more likely estimate for India would be 4% to 4½% of the population which may be classified as mentally retarded, or more than 20,000,000 people (36). Malnutrition may produce proportionately more mentally handicapped children in India than in most western countries. Former Food Minister Chidambaram Subramaniam told the World Food Crisis Committee in Washington in October 1967 that even if India were able to feed itself within a few years, the nutrition problem would remain because there would still be the threat of protein starvation. He asserted that because of lack of protein, from 35% to 40% of the 20 million babies born in India each year eventually suffer some brain damage, and many are so stunted in physical and mental growth that by the time they reach school age they are incapable of profiting from school instruction. There is medical controversy over the extent and permanence of these effects of protein deprivation, but some effects of this kind are likely to continue because of factors such as poverty, scarcity of food, religious taboos against consuming beef, traditional vegetarianism, and unwillingness to try protein supplements devised by Indian nutritionists (173).

Mental retardation in India may also be related to such factors as intermarriage in small close-knit groups, that is, in-breeding

among members of various castes and communities. Other factors contributing to the incidence of mental retardation are regarded as legacies from an undeveloped colonial regime: prenatal conditions such as malnutrition of the mother during pregnancy; alcoholism and venereal disease; deliveries undertaken by untrained village midwives in unhygienic circumstances; and the scourge of trauma and infection, especially typhoid and eruptive fevers. In the post-independence period substantial progress has been made in improving and making available medical care and health education, especially in large cities, even though the lack of trained personnel remains an acute problem. This should result in a reduction in the incidence of mental retardation (368).

Analysis of the data concerning the retarded children attending the department of Child Psychiatry at Niloufer Hospital in Hyderabad over a seven-year period indicated that most of the conditions were preventable if adequate medical measures were applied, as in the toxemias of pregnancy and other prenatal and natal obstetrical hazards. The heavy incidence of cases of mental retardation from culturally deprived backgrounds stressed the adverse effects of certain social, economic, and cultural conditions (282).

Malnutrition and cultural impoverishment together produce mental retardation, as shown in a study made in South India of 163 children $4\frac{1}{2}$ to 6 years of age, of whom 52 were living in an orphanage and the remaining 111 living at home. Poor word-concept development and low scores on the Leiter International Performance Scale characterized both groups, the orphanage group performing more poorly. It was also found in this study that improvement in the child's nutrition did not in itself improve his performance, since the basic lack of psychological stimulation in an impoverished environment had not changed (363).

One type of mental retardation—phenylketonuria—seems to be less common in India than in western countries. A survey was made of ten schools, homes, and institutions for the mentally handicapped (of 24 known to exist in 1954)—eight in Bombay,

one in Bangalore, and one in Madras—to make urine tests to detect phenylketonuria. No cases were found among the 510 pupils tested out of a total enrollment of 579 (66).

The lack of trained professional personnel and the lack of financial resources limit incidence studies, for the time being, to the screening of the school-age population. Teachers need to learn to recognize the overt manifestations of mental subnormality in pupils and refer them to psychiatric institutions, clinics, or child guidance clinics. These institutions and clinics in turn need to encourage parents to bring in their children for assessment when there is question concerning their intelligence (145).

The first scientific approach to the problem of mental retardation in India was a 1929 Bombay survey undertaken to provide a basis for preparing a Kannada and Marathi version of the Stanford-Binet intelligence scale (245). Findings in the schools of Dharwar indicated an incidence of 4% retarded in the school population. This conclusion emphasized the need of many mentally handicapped children for special education. Two sample surveys conducted in Mysore and Punjab indicated that more than 600,000 of the children in India may be mentally deficient (105).

When India achieved Independence in 1947, it had only three institutions for the care of the mentally retarded: the Central Nursing Home at Ranchi established in 1934, the Home for Mentally Deficient Children founded in Bombay in 1941, and the School for Children in Need of Special Care organized in Bombay in 1944 by the Society for the Care, Treatment, and Training of Children in Need of Special Care.

The Central Nursing Home provided some services for mentally retarded children, but until recently only as an incidental aspect of its program. It now provides for 12 paying adult inmates, both chronic mental patients and congenital mental defectives, who engage in individual occupations such as gardening, needlework, drawing, typing, and domestic work (47).

The first really serious effort to start an institution for mentally retarded children was made by the Children's Aid Society of Bombay, when it established a residential institution about forty years ago, and began to provide education and rehabilitation for delinquent and destitute children. When it was discovered that many of the children were mentally retarded, the society started in 1941 an annex in the Children's Home, Chembur, Bombay, now known as the Home for Mentally Deficient Children, with about 120 residents. This is a certified school to which children are committed by the Juvenile Courts of the state of Maharashtra (36). The 85 boys and 35 girls, all under 18 years of age, have I.Q.'s ranging from 20 to 80 (47).

Since this was a custodial institution with admission only through the Juvenile Courts, and since it lacked a good school program, many of the parents were not satisfied. One parent started a small school in Bombay in 1944 which has since become the largest school of its kind in India, known as the Special School for Children in Need of Special Care (36); the children range in age from six to 18, and have I.Q.'s between 30 and 75 (47). This may have been the first special school in India for the retarded, though it is claimed that one was started in Ranchi with about six children (78a). The school now has only four pupils, and a very limited program.

In the decade from 1950 to 1960, 11 institutions were started, and another 35 between 1960 and 1966 (78a). Except for four of these (two in Delhi, one in Chandigarh, and one in Rajkot) the institutions were started by interested parents and voluntary organizations. The recent trend has been in the direction of more day provisions, since parents themselves favor such arrangements (36).

Statements concerning the number of institutions in the country as a whole which make some kind of provision for the mentally retarded have varied from 27 to around 50 in most instances (36, 145, 186), and the numbers provided for, from 1,400 to 2,000. Differences in totals have reflected in part a

rapid rate of increase in the establishment of services for the mentally retarded in recent years.

In 1966 a short questionnaire was sent to 56 institutions and to each State Directorate by the Sharada School for Mentally Retarded Children in Ahmedabad, Gujarat. Responses were received from 49 institutions and five state directorates, which indicated that 12 states had programs for the mentally retarded, with the largest number in Maharashtra State. The classification of institutions according to name was as follows (53):

Homes	10
Hospitals	2
Medical rehabilitation institute	1
Occupational therapy center	1
Special schools	24
Special classes	2
Certified school	1
Vocational training centers	2
Special schools with specific indication	8
Total	51

The types of program were as follows:

Clinical	10
Teacher-training	3
Medical rehabilitation	5
Education	39
Purely vocational training	1
Educational and vocational	11
Medical rehabilitation and vocational	3
Educational and pre-vocational	16
Research	7
Psychotherapy	1
Care and medical treatment	2

Founding dates were cited by 35, and of these only two had appeared in the 1940's, nine in the 1950's, and 24 between 1960 and 1966. In terms of sponsorship, 15% were government institutions (of which two were operated by the central government), 38% were government-aided, and 47% were private;

this indicated that over half (53%) were either operated or subsidized by the government. In the descriptions of the kinds of services provided, the term "educational" appeared in 71% of the titles. About a fifth of the institutions (19%) accepted children as early as the age of three or four, and 12% set no upper limit for the age at which the individual would be accepted (122). These programs provided for nearly twice as many males as females—941 males and 543 females. Of the total, 11 programs were residential, 20 day, and seven both residential and day. In four states (Assam, Jammu and Kashmir, Orissa, and Rajasthan) there was no institution at all which gave assistance to the retarded (354, 355).

A December 1967 Directory of Institutions for the Mentally Retarded in India was published by the Government Institute of Special Education at Chandigarh, on the basis of questionnaire data secured from institutions listed in the proceedings of the 1967 All India Seminar on Mental Retardation. The directory indicated a total of 46 institutions variously called a home, school, special class, clinic, center, nursery, or workshop, located in 12 states and the Union Territory (105). The largest number (15 or 31%) were found in Maharashtra State. Approximately two-thirds (30 or 65%) were founded between 1960 and 1967. Of the 46, seven were operated by the central or state government, and the remainder by private individuals or voluntary organizations, usually with government aid. Two were for girls only and two for boys only. Nearly a third specified that the I.Q. be above 40 or 50 or that the intelligence be at least "moderate" or "not severe," and some specified that the individual be toilet-trained or manageable. One institution even required that the I.Q. be above 70! The "institutions" listed included the psychiatric units found in almost all the medical colleges and large hospitals, which provide out-patient services in the form of advice and guidance for the mentally retarded.

Five institutions had attached sheltered workshops, whereas one was an independent sheltered workshop. Nine had guidance services available for mentally retarded adults. The total *capacity* was 2,091, although three institutions did not report their exact

capacity, and in others the capacity exceeded the number actually accommodated. The number served ranged from three to 226. The minimum age for acceptance ranged in most places from three to eight, with ages five and six the most frequently mentioned; only four institutions limited their programs to teenagers and adults. The maximum age for most was 18 or 20, one school had a maximum age of eight, and four had no age limit. Most facilities (26) provided day services, nine were residential only, and 11 provided both day and boarding services.

The most recent list, for January 1968, includes a total of 63 institutions and services, of which 40 are designated specifically for the mentally retarded, and with the remainder primarily for the physically or socially handicapped, mentally ill, aged, and emotionally disturbed. This represents an increase in the number intended for the mentally retarded only (54, 122, 260). The classification of persons as mentally retarded is complicated by the fact that most of them are multiply handicapped. A 1967 study found that 97.5% of a group of mentally retarded children had at least one other kind of handicap (355). It has been reported that at least a third of the institutions accepting mentally retarded children are intended primarily for the physically handicapped, admitting blind, deaf, and crippled children who are not retarded. In the case of three custodial institutions children are admitted through court orders, whereas admissions are on a voluntary basis in all the other institutions. Children are brought to these establishments directly by parents or are referred by hospitals, child guidance clinics, and general practitioners (122, 260).

Many institutions do not charge fees, but some have a sliding scale according to income, and still others have fixed charges. Fees range from five to 150 rupees per month, with an extra charge in some cases for special attendants. Most of the institutions are subsidized by the government, to the extent of 95% of the total expenditures in some cases (79). Five or six of the schools transport day pupils, but lack of this service prevents many children from attending such a school when their parents wish to keep them at home or when hostel accommoda-

tions are not available. Very few institutions own their own buildings. Most use rented buildings in residential areas that are not really suitable, since they are small and are likely to be overcrowded.

There is no uniform program or standard curriculum for these schools. Only two or three schools try to provide education according to a fixed curriculum. Many schools try to teach educable children the fundamentals of primary education, but most schools simply concentrate on simple craft training for both educable and trainable groups while those with the lowest IQ's are kept occupied with recreational activities and casual play. A special curriculum and appropriate teaching materials and methods are in use at the Model School for Mentally Deficient Children in New Delhi (80). All the schools do have some provision for recreational activities, with radios, record players, outdoor and indoor games, and in a few instances a physical education program. Picnics and educational tours are sometimes included, as well as weekly cultural programs.

The maintenance of family ties is seen as important, as is long-term supplementary aid and counselling for the parents. Since dependence on home and family often continues for the mentally retarded beyond the age at which normal youngsters become independent, a program of after-care worked out in cooperation with mothers is needed for the time when the young people are past the age range provided for in special schools or programs (437).

Nearly all the institutions attempt to give some kind of pre-vocational or vocational training to the pupils in crafts such as spinning and weaving, carpentry, toy-making, doll-making, basketry, tailoring and needlework, hand or machine knitting, cardboard work, fretwork and gardening. The craft training, however, is designed in most instances to keep the youngsters busy rather than to prepare them for jobs in the community. Thus the chief problem is that although many students achieve some proficiency in such crafts, they are still not able to earn their living with these skills. There are several reasons for this: (1) little attention

is usually given to the development of appropriate social habits and attitudes, with the result that even those who are capable of handling regular jobs fail to keep them; (2) there is no job placement service after they are trained; (3) those trained are not fully trained in the skills concerned and do not possess officially recognized certificates which are based on specific minimum educational attainments for the different crafts; and (4) there are no vocational guidance or follow-up services to help the retarded youngsters, when once employed, to continue in their jobs.

Such problems indicate the necessity for establishing sheltered workshops in different parts of the country for the mentally retarded. At present the only sheltered workshop available for the mentally retarded is the one in Delhi where both mentally and physically handicapped persons are trained to work together in various crafts and who receive payment for their work. But even this arrangement is not satisfactory, for the division of work is such that the mentally handicapped person is not trained to work independently. The few sheltered workshop opportunities that exist include no trained professional supervision. The foreign expert who made the first survey of the institutions for the mentally retarded in India commented that none could be recommended to Indian parents; they would not meet the standards specified in most western countries. Probably one of the first important tasks of a national organization for the mentally retarded should be the setting up of standards to be met by institutions that claim to care for and educate the mentally retarded (245).

Pilot programs serve the purpose of setting such standards for educational and vocational provisions for the mentally retarded, as at the Nandanvan Day School for Mentally Retarded Persons in Nagpur. Opened in 1960, this is said to be the only school in central India devoted to the educational and vocational training of the mentally retarded. A research award from the U.S. Social and Rehabilitation Service for the period from 1965 to 1970 focuses on the determination of the incidence and prevalence of mental retardation among children and adolescents

in Nagpur, and the rehabilitation potential of this group. Services include pre-primary and primary education, and pre-vocational and workshop training in skills such as tailoring, cooking, cane-work, bookbinding, toy-making, weaving, clay work, knitting, and embroidery. The school also provides a hostel for boys over 15 years of age. So far 21 students have been placed in gainful occupations (454). Other pilot programs assisted by SRS grants are those of Bala Vihar, Madras, to demonstrate simple teaching methods to mothers of mental retardates in a day-care center, and of the School of Social Work, Varanasi, to study the education, treatment, and rehabilitation of mental retardates (241).

In existing institutions there is usually a shortage of trained and specialized personnel. Where specialists are available, they may fail to recognize the necessity for the team approach to a solution of the problems of a handicapped child, even though mentally retarded children often have associated physical, social, or emotional problems as well. Of the 125 children in the School and Home for the Mentally Retarded in Delhi, 30 are epileptics, 36 are crippled, two are partially sighted, one is completely blind, 65 have speech handicaps, and almost all of them evince behavior problems.

Physical defects in the child are frequently overemphasized since these are regarded as more acceptable than the mental defect. Parents are easily disappointed because they expect miracles from the institutional staff, who have to help the parents to understand the child's limitations and plan his future realistically. A 1965-66 assessment of 320 mentally retarded children at the psychiatric out-patient department and the Child Guidance Clinic of the All India Institute of Medical Sciences in Delhi showed that in most instances the parents did not consider the mental retardation their primary problem; such physical factors as general poor health and poor speech development were more often cited. Only 19% of the parents were able to assess and understand their child's limited potential realistically, 31% refused to accept the fact of retardation, 21% accepted the fact of retardation but could not really assess the child's potentialities, 32%

overestimated the child's capabilities, and only 3% underestimated them. Most children were nine to 11 years of age when first brought in by their parents, which in itself limits what can be done for them. More than 83% of the parents had perviously sought help from non-professional sources, a reflection of the limited services available and lack of understanding of what can or should be done for the child (353, 355).

Other problems include the lack of suitable differentiation in program in terms of I.Q. level. Groupings into educable, trainable, and uneducable categories give a better opportunity for appropriate education. Even when a good institutional adjustment is effected, the youngster still faces serious adjustment problems on leaving the institution, such as lack of acceptance by employers, the need to understand the responsibilities imposed by marriage, and the possibility of exploitation by unscrupulous persons.

Detailed information concerning the nature and number of specific state provisions for the mentally retarded is available for only a few individual states. The number of mentally retarded children in Gujarat is estimated as three per 1,000, but there are only two institutions for them, one voluntary and one state. The voluntary institution is the Sharada Day School for the Mentally Retarded, founded in 1965, the only such institution making provision for the overall needs of mentally retarded youngsters. The children are divided into three groups the severely retarded, the moderately retarded, and those who attend the school only for recreational purposes. Sharada also provides some teacher-training and parent guidance, plus medical and psychiatric services, and conducts research concerning all aspects of mental retardation (75).

In the state of Maharashtra the organizations and institutions serving the mentally handicapped include (370):

The Home for Mentally Deficient Children, Bombay. This was the earliest provision for mentally retarded children, started in September 1941 with 37 boys and three girls by the Children's

Aid Society of Bombay. Psychiatric, psychological, educational and occupational services are provided for mentally retarded children with or without other disabilities.

The School for Children in Need of Special Care, Bombay. Founded in 1944, this institution has 200 children of whom 50 are residential. They are given psychiatric, psychological and medical services, and are grouped according to chronological age though mental age is taken into consideration. Simple craft training is given.

The Haven, School for Mentally Handicapped Children, Bombay. This is a residential institution for about 30 children, with some academic education and craft work.

The "Nandanvan" School for Handicapped Children, Nagpur. This day school for 35 mentally retarded children was founded by a voluntary organization, and has an advisory committee of specialists.

In Maharashtra, five institutions charge no fees, six have a sliding scale, and four have fixed fees. The most common media of instruction are Marathi, Gujarati, and English, with Hindi much less common. Of 19 institutions, eleven are private, five are government-aided, two are semi-government agencies, and one is a state institution. The 19 programs include 11 special schools, three homes, one certified school, one pre-school program, two special classes, and one purely vocational program. All but the last offer some kind of basic education, varying considerably in nature and extent. Only two have clinical services such as diagnosis, assessment, and evaluation. Only one institution offers a teacher-training course. Just one institution provides comprehensive medical rehabilitation with physical and occupational therapy, and four others offer some more limited form of medical care and treatment. Aside from the one program which specifically prepares the mentally retarded for open employment, five institutions combine vocational and educational training. Research is conducted as a part of only two programs (36).

The State of Maharashtra and the city of Bombay are leaders in offerings for the mentally retarded. A recent survey of Indian

programs for the mentally retarded revealed that 19 out of a total of 56 programs were located in Maharashtra State, and of these 13 were in Bombay (36). The state as a whole and the city of Bombay together account for 30% of the residential institutions in the country, with 60% of the total residents, and 40% of the day schools with 40% of the total enrolled. Bombay itself has half of the residential schools in the state, with 440 children and eight of the 10 day schools, with 160 children (245). A Bombay publication was the first journal to discuss mental retardation—*Occupational Therapy and Rehabilitation in Asia* which was renamed *The Journal of Rehabilitation in Asia* in 1961. Another Bombay move first occurred in 1963, when the Indian Society for the Rehabilitation of the Handicapped sponsored the first large Seminar and Exhibition concerning mental retardation in connection with the first All-India "Week" for the mentally retarded which is now observed the first week of December each year in various parts of India. In Bombay too the first special section for the handicapped in its Regional Employment Exchange made possible the inclusion of mentally handicapped youth, some of whom were already being trained in a sheltered workshop run by the Bombay Society for the Vocational Rehabilitation of the Retarded.

The School for Children in Need of Special Care in Bombay in its 1965-66 annual report listed a total of 200 children distributed as follows (396):

Preschool	31 children
Primary	76
Preparatory	48
Junior	12
Senior	4
Occupational therapy	4
Trainable	13
Vocational training	32

For these children there was a staff of 38 persons: 21 classroom teachers, seven special teachers, six vocational teachers, one occupational therapist, one speech therapist, one psychologist, and one social worker. During the year the psychologist pro-

vided therapy for children who were distractible and restless (among these with low IQ's), agitated and anxious, and mentally disturbed.

The distribution of I.Q.'s was as follows:

60-75	26 children
45-60	72
30-45	63
30 or under	46
Untestable	13

Of the 220 children, 90 pay no fees (81 in the day school and nine in the vocational school), 48 pay partial fees, and the remainder pay full fees.

Another example of private efforts to provide for the mentally retarded in Bombay is "The Haven" on the outskirts of the city, where a residential home and school was started in April 1954, which has grown from its initial group of three children to the present total of 50 boys and girls and 16 staff members. Many come from poor families; the institution pays all expenses for all the children. They are taught simple crafts such as chair-caning, carpentry, embroidery, and weaving, and they tend a kitchen garden. Like many other places of this kind, the impetus came from the parent of a retarded youngster for whom no other provisions could be found.

The state of Maharashtra is in the forefront of research programs dealing with mental handicaps, at the Vakeel School at Sewri, Bombay and at the SFS College Guidance Centre Clinic for Mental Retardation in Nagpur. One educational research project is an experiment with integrated classes at the Canossian High School in Mahim, Bombay, for educable mentally retarded youngsters, who are expected to profit from this close association with normal peers.

Information concerning provisions for the mentally retarded in the state of Delhi is limited chiefly to the capital area. The private school for the mentally retarded in Delhi was started in late 1964. It provides for 25 boys and girls $3\frac{1}{2}$ to 18 years

of age, with a wide IQ range. It is operated by a local association for the mentally retarded and another voluntary society. They found that only in recent years have doctors become convinced that mentally retarded children should be educated. A workshop is to be appended for which they have raised funds and purchased a four-acre plot of land. The principal of the school has had training both in England and the U.S.A. The children are tested in the government Child Guidance Clinic for diagnostic purposes by a psychologist and social worker. There are four teachers, three of whom have had special training in other countries. Transportation is provided; some of the children are on the bus as long as two hours. Fees range from 10 to 50 rupees a month in terms of income, three pupils paying no fees; for an extra 10 rupees a month the child can have a snack of milk and fruit. Parent meetings are held once a month.

On the very same day — December 1, 1964 — an experimental school for mentally retarded children was established in New Delhi by the Department of Social Security of the Government of India. The Kasturba Niketan, Lajpat Nagar, was located in the capital because it was felt that this location would provide advantages such as collaboration with the All India Institute of Medical Sciences, the Central Institute of Education, and the Child Guidance Clinic of the Nursing College. This pilot project parallels a similar project established for the blind. The principal of the school, Mrs. Satyavaty V. Char, is also a member of the association operating the private school.

The children accepted are those whose retardation results from constitutional or hereditary factors rather than emotional maladjustment or remediable environmental factors. Mental deficiency is thus defined as social incompetency due to intellectual abnormality which has been developmentally arrested; is of constitutional origin; obtains at maturity; and is essentially incurable. Children applying for admission must be educable (with I.Q.'s between 50 and 75), between six and 12 years of age if they have had no previous education, below 15 years of age if they have already had some education, and should not have

additional severe physical disabilities such as blindness, deafness, epilepsy, or some other crippling condition. Thus the I.Q.'s are higher than at other schools for the mentally retarded. Of the places available, 20% are reserved for children from scheduled Castes and Scheduled Tribes, unless there are too few such children to fill the quota. The school accommodates 85 residential pupils and 15 day pupils (60 boys and 40 girls), the day pupils being transported by their parents. A social worker is in charge of admissions. There are plans for including later a day nursery for younger children.

Keeping in mind the individual needs of the children, the school follows the basic curriculum prescribed by the Delhi administration for its primary schools. In addition, special attention is given to the development of social attitudes and habits, muscular coordination and the activities of everyday life, personal hygiene, and hobbies and leisure-time activities. The program includes gymnastics, occupational therapy, dramatics, and folk dancing. Instruction is given only in Hindi. The child returns to the regular school when possible.

Instruction is free for both residential and day pupils, as is room and board for residential pupils whose parents earn no more than 500 rupees a month. Those with higher incomes pay on a graduated scale. Routine medical care is provided by a part-time medical officer. When vacations occur, parents are expected to take the children home at their own expense.

Progress reports are provided for parents at intervals, and parent-teacher meetings are held periodically. There is an active parent association, which took part in the 1966 conference on mental retardation in New Delhi by making arrangements and providing entertainment for participants. The Executive Committee of the association is also composed of parents. At first hostile and suspicious, the parents now want to raise funds for new equipment and other improvements (78a).

The one-year teacher-training course which is part of the program of this model school in New Delhi is one of four

programs for the training of teachers of mentally retarded children in India. The School for Children in Need of Special Care in Bombay has a one-year diploma course conducted by the organization operating the school — the Society for the Care, Treatment, and Training of Children in Need of Special Care. This society commented in the prospectus for the teacher-training course that aside from one or two institutions run by private agencies for children with gross mental deficiency, there had been no institutional provision for such youngsters. Day schools and day occupation centres were also lacking until the establishment in 1944 of the school run by this society. For this reason there had been no systematic employment of professionally trained teachers for mentally retarded youngsters. The Society therefore decided to establish courses of one-year's duration for these teachers. Students who apply must have a degree in teaching. The curriculum provides for both theoretical and practical instruction. The diploma given by the Society for the special teaching of mentally retarded children is recognized by the state government of Maharashtra.

Other training courses one year in length are given in Chandigarh by the Punjab Basic Training College, and at the Sharada School in Ahmedabad, though this latter program is offered in the Gujarati language only. The number trained in such programs varies from year to year. As yet, most of the teachers of mentally retarded children in India are untrained, and the few professionals who have been trained in other countries usually occupy administrative positions (245). Short-term programs designed for both parents and teachers are offered by the Nagpur Mental Retardation Clinic, which conducts both in Bombay and in Nagpur ten-day lecture and workshop programs discussing the rehabilitation techniques which can be used for mentally retarded children (245).

Public attention has been drawn to the needs of the mentally handicapped through the celebration of an annual day or week for the mentally retarded. December 8 is usually observed as "The All India Day for the Mentally Retarded," with the theme that "The Mentally Retarded Can Be Helped." Actually local

groups may select another specific day even though the radio programs which are part of the observances usually occur on December 8. Other groups working with the handicapped are also being involved in the celebration of this special day.*

Conferences focused on the mentally handicapped have been organized. The first such meeting was the 1963 Bombay Seminar, followed by a 1964 All-India Seminar in Chandigarh where the first attempt was made to establish an All-India Association on Mental Retardation. The Delhi Society for the Welfare of Mentally Retarded Children, the only association organized on a regional or city-wide basis, acted as host for the first All-India Conference on Mental Retardation held in New Delhi in November 1966, with the All-India Association on Mental Retardation as a joint sponsor (122). It may be unfortunate that there are now two national organizations for the mentally retarded with overlapping programs. It has been suggested that:

Efforts should be made to amalgamate or diversify their approaches to the problems of mental retardation (245).

A new journal, *The Indian Journal of Mental Retardation*, published by the All-India Association on Mental Retardation, appeared for the first time in January 1968, and is to have two issues a year. This is a professional journal reporting research in the field, rather than a publication intended primarily for parents and the general public.

A clearer legal definition of the mentally retarded as compared with the mentally ill is needed, in order to make possible more distinct provisions for these two groups. Such a problem is not unique to India, since even western countries still confuse mental retardation with mental illness, or combine them in legislative provisions (441). Legal restrictions may be placed on an individual if he is considered to be a lunatic, who is defined in the Indian Lunacy Act of 1912 as an idiot or a person of unsound mind. But neither of these categories was clearly

* Examples of observances are found in the April 1968 issue of *The Journal of Rehabilitation in Asia*.

described in that Act, and certainly they did not accord with advances in understanding concerning the meaning of mental retardation and mental illness respectively (338).

Also needed is a clearer legal differentiation between the mentally retarded youngster and the delinquent or incorrigible youngster. Adequate child welfare laws for the protection and placement of mentally retarded children have yet to be passed and enforced. In states like Maharashtra and Delhi, the mentally retarded are brought before the Juvenile Courts or the Child Welfare Boards as uncontrollable children in order to be admitted to institutions. Parents understandably object to following this procedure in order to secure services for their mentally handicapped children.

There is no comprehensive law in the country to cover the mentally retarded persons and provide institutional and educational facilities for their proper care, treatment and training (160).

The Children's Act, enforced in most of the states, covers only children under 16 years of age in the majority of these states, with an age differentiation between boys and girls—an age maximum of 16 for boys and 18 for girls. The provisions apply to neglected children or children in need of care and protection, and those alleged to have committed an offense. Thus the mentally retarded child would be included only if interpretations were made such as to consider him a socially deprived child needing protection, an uncontrollable child, or a child of unsound mind, but no clearcut provision is made on the specific basis of mental retardation itself.

Until such special provisions are made, the needs of the mentally retarded must be served by facilities not intended originally for their use. For example, the mentally retarded have increasingly been served by the occupational therapy departments of large hospitals, such as the Occupational Therapy Training School at King Edward Memorial Hospital in Bombay. In an occasional clinic limited facilities for education and training also

exist, such as at the Powawala's Clinic in Bombay operated by the Maharashtra State Women's Council, where afternoon classes are held for a few mentally retarded children. Child Guidance Clinics also provide services such as assessment and parent counselling (47).

In the Child Guidance Clinic of the Tata Institute of Social Sciences in Bombay, 24.13% of the 982 cases referred during a seven-year period from July 1950 to June 1957 proved to have below-normal I.Q.'s. Most of these 237 children were referred on the basis of mental retardation, but the remainder were referred primarily because of behavior problems. Two other Child Guidance Clinics in Bombay report that they too have a large number of mentally retarded children referred to them. It is evident that until some other kind of special service is provided for mentally retarded children, the child guidance centers must continue to accept them. In addition to a shortage of trained personnel and diagnostic services, problems are created by the fact that physicians, pediatricians, and even psychiatrists have up to the present shown little interest in this group or awareness of the nature and extent of their needs (248).

Dissemination of information throughout India concerning the nature and number of services currently available for the mentally retarded is needed. It is important to inform not only the general public but also professional personnel such as physicians, teachers, and social workers, who know very little about these services at present. Before the organization of the first All India Seminar on mentally handicapped children held in Chandigarh in 1965, even the institutions for the mentally retarded knew nothing about each other. The publishers of the 1967 directory of such institutions give credit to Dr. W. R. Centerwall for the earliest collection of such information. In 1964 this missionary pediatrician from the Medical College in Vellore made a study of the incidence of phenylketonuria among the mentally retarded by visiting all the institutions known to exist at that time, and prepared the first list of such institutions that had ever appeared. More complete information became available at the

All India Conference on Mental Retardation held in Delhi in November 1966, and at the Second All India Seminar on Mental Retardation in Chandigarh in May 1967. Now with the recent publication of the 1967 directory, it is hoped that even more widespread distribution of this kind of information will occur, especially if the heads of all hospitals, medical colleges, educational institutions, research centers, and other welfare agencies at least order a copy of this directory for their libraries (105).

Although much valuable work has been done for the mentally retarded by various voluntary organizations, there is a need for central coordination of their efforts (44). This could be provided by a special committee appointed by the central government to function as a permanent Advisory Committee for the Welfare of Mentally Retarded Children. This committee could determine principles governing priorities in the field of their welfare, coordinate public and private teacher-training programs, establish syllabi and minimum standards for institutions, and indicate the basis for registering such children.

The limitations of existing programs and services for the mentally handicapped are widely recognized in India. Suggestions for their eventual improvement include the following (36, 187, 288, 311):

1. Recognition of the fact that the broad category of the "handicapped" includes the mentally handicapped.
2. Incorporation of provisions for mentally handicapped children under a special Act for their protection, care and training other than the Children's Act under which they are now committed through the Juvenile Courts.
3. Bringing together of all agencies serving the mentally handicapped under one department, either Education or Social Welfare.
4. Increase in subsidies from both central and state governments to provide more adequate financial support for programs.

5. Extension of the system of government scholarships and grants for education to cover the mentally retarded.
6. Establishment of minimum standards for programs in terms of size, type of persons accepted, kinds of services, and fees. Limitation of size to 100 persons. Inclusion of a Social Service department in each institution.
7. Increase in the number of private organizations to promote services for the mentally handicapped in the various parts of the country.
8. Better organized *total* rehabilitation programs including all types of services such as clinical and counselling, educational, recreational, and vocational.
9. Development of citizens' understanding of mental retardation through widespread dissemination of scientific information.
10. Publicizing of existing facilities.
11. Expansion of additional facilities of all types—special residential schools, special day schools, and special classes at all levels in the regular school.
12. Separation of custodial cases from the trainable and educable.
13. Early referral for services; possible initial screening by teachers in the regular school, who should be trained to note characteristics suggestive of subnormality.
14. Setting up of more economical and practical day-care programs.
15. Formulation of more research programs to collect data to be used as a basis for planning services.
16. Use of institutions for field-work placement for students of social work, medicine, and teaching.

In addition, there is recognition of the need for assuming some responsibility for what happens to the young mentally retarded person after he leaves the institution, as indicated in the following suggestions:

1. Attention to rehabilitation of youngsters discharged from institutions.
2. Provision of vocational training particularly for the 15-to-25 age group.
3. Provision of after-care homes with sheltered workshops for former inmates of residential institutions who cannot return home, and hostels for those in open employment.
4. Inclusion of the mentally handicapped in services provided by the special employment offices for the handicapped.
5. Education of the general public and of potential employers to assure the mentally retarded of employment when training becomes available.

The vocational problems of the mentally retarded have been accentuated by continuing social and economic changes in India. In the quiet, easy-going life of an Indian village, where there are many simple repetitive jobs to perform, and where living accommodations are usually adequate for him, the mental defective has had an ideal home. Here he is accepted with love in spite of his limitations, which are less evident in this setting than in an urban environment, and he is assured of sheltered employment under the indulgent supervision of his village associates. But the shift from a rural agrarian to an industrialized urban economy creates the problem of finding urban institutions, both custodial and educational, to provide the mentally retarded with care and with vocational training. Public misgivings about their employability in these urban settings are difficult to allay, particularly in the face of rising general unemployment (368).

Since India is still primarily a rural agricultural economy, vocational rehabilitation of the mentally handicapped can include such activities as gardening, farmwork, harvesting crops, trimming hedges, assisting in irrigation, crude carpentry, and tinwork and ironwork. For women household occupations have been emphasized such as cooking, kitchenwork, dishwashing, simple embroidery, tailoring, and housecleaning. A few centers have had such training for many years, such as the Parsee School

for Girls, Parsee Colony, Bombay, which also helps to place the girls in private homes, and the Seva Sadan, Gamdevi, Bombay, where the girls' domestic training includes drycleaning and practical nursing. Placement of mentally retarded girls for domestic work in middle-class homes has of course involved problems such as possible exploitation, too high expectations in terms of initiative and versatility, loneliness and uneasiness in a cultural milieu different from the girl's early experience, lack of individual aptitude for domestic work, and the possibility of associated emotional instability.

Whatever the problems involved, however, a carefully planned and comprehensive program of services for the mentally retarded must eventuate wherever possible, as for other handicapped persons, in the achievement of vocational usefulness and an integration into community life.

Chapter 11

THE EMOTIONALLY AND SOCIALLY HANDICAPPED

PART I: THE EMOTIONALLY MALADJUSTED

Like other kinds of handicapped persons, the emotionally maladjusted (mentally ill and emotionally disturbed) need rehabilitation. Many persons with physical handicaps also have emotional handicaps and need psychological services in addition to medical and vocational services. For example, nearly two-thirds of the 500 physically handicapped persons included in one study were found to be suffering from some kind of psychological disturbance (52).

Mental health services in India are quite inadequate at the present time. Rehabilitation services for the mentally ill or former mental patients have tended to lag behind rehabilitation provisions for persons with physical handicaps, as in other countries.

It is estimated that there are in India at least 2,000,000 mental defectives and psychotics who need psychiatric treatment, and with the addition of psychoneurotics the total is between 6,000,000 and 8,000,000. The 36 mental hospitals in the country provide for only 15,000 patients. The central government administers two mental hospitals at Ranchi and Bangalore respectively, and there are a few private establishments, but most of the hospitals are operated by state governments. They are distributed as follows (274):

Assam	1
Madras	1
Mysore	1
Punjab	1
Bihar	2
Andhra Pradesh	2
Kerala	3
Madhya Pradesh	3
Rajasthan	3
Uttar Pradesh	3
West Bengal	4
Jammu and Kashmir	5
Maharashtra	4
Gujarat	1

Each hospital usually has a full-time superintendent. In hospitals administered by state governments, this superintendent works under the Director of Medical and Health Services in the state concerned. He is usually assisted by one Deputy Superintendent who takes charge when the superintendent is absent. In addition there are male and female medical officers for the male and female divisions respectively in each hospital, who in turn are assisted by nurses and in a few places by social workers.

An exception to the above pattern is found at the Mental Hospital in Varanasi for the criminally insane, with a physician in private practice as a part-time superintendent who visits the institution twice a week for a few hours each time, and who is assisted by a Deputy Superintendent and two or three medical officers. Psychotherapy usually is not available, and the care received by patients is primarily custodial. The Deputy Superintendent has complained that he himself is overburdened with clerical work, the medical officers have too heavy a caseload to perform satisfactorily, and the attendants, who are not professionally oriented, often mistreat the inmates.

The Government Mental Hospital at Bangalore has been associated since 1954 with the All India Institute of Mental Health. The Hospital for Mental Diseases, Kanke, Ranchi, is administered by the Ministry of Health of the central government

with the assistance of an Advisory Committee comprising the Secretary of the Ministry of Health, the Deputy Director-General of Health Services (Medical), New Delhi, and representatives from West Bengal, Bihar, Uttar Pradesh, Orissa, Assam, and Delhi, including the Superintendent of the hospital. All costs are paid by the central government, while the state governments pay for patients admitted from their states, this admission being based on a quota of beds for each state. The patients themselves pay only a fraction of the costs of their stay, except for "independent" cases admitted outside these channels, in which case the charges are borne by the patient or his relatives.

There are several psychiatric institutions, most of them located in Bombay and Calcutta, which are administered privately, some on a non-profit basis. Bangiya Unmad Asram is the only mental hospital in India where treatment is administered entirely on the basis of the Indian system of medicine. Nur Manzil Psychiatric Centre in Lucknow is supported by the Methodist Church, and provides complete diagnostic and treatment facilities, but the costs here are too high for the average person to meet (274).

The effectiveness of the mental hospitals is said to be limited by a number of factors: (1) their isolation and lack of contact with the normal community; (2) the outdated nature of the Indian Lunacy Act, 1912, governing the admission, care, and treatment of psychotics; (3) lack of adequate financial support; and (4) general indifference of the public and of the government toward the reconsideration of mental health needs. Goals must be changed from custodial to therapeutic, though there is at present little modern equipment or training for this purpose. The Health Survey and Planning Committee has outlined inexpensive pilot preventive mental health projects, but these suggestions have not yet been implemented (274).

The 1946 Bhore Committee Report stressed the fact that mental health administration is an area of specialization to which the persons involved need to devote their entire lives in order to accumulate the necessary experience and perspectives. Another survey eleven years later indicated that a rapid shift from custo-

dial to treatment orientation of services was still needed. The Mudaliar Committee underscored the problem of meeting mental health needs by pointing out that the ratio of mental patients is not less than two per 1,000 of the general population, which indicates that at least a million persons in India require hospitalization, without including mental defectives and epileptics who average about five per 1,000. There is practically no provision for the education of mental defectives, and general hospitals have inadequate facilities for treating the psychoneurotic (274).

Most of the mental hospitals are governed by the Indian Lunacy Act 1912, which needs an overall revision. The obsolete character of the laws determining the reception, care, and treatment of the mental patient has hampered progress. The Government of India has been preparing a draft of amendments for the Lunacy Act but so far no action has been taken (274).

Under the Lunacy Act mental patients are separated into four "classes." The first three are for paying patients, and the placement of the patient is determined by his ability to pay. The fourth class is for non-paying patients. This built-in class system violates the modern concept that mental illness is not the patient's fault or responsibility and that he is entitled to adequate care and treatment regardless of his socio-economic status (274).

It was reported at a Bombay conference in January 1968 that there were then 26 government mental hospitals, eight private institutions for the mentally ill, and a few psychiatric out-patient departments in the various general hospitals in large cities like Bombay, Calcutta, and Delhi. In most cases the services are directed by psychiatrists who understand the important role of occupational therapy in treatment programs. However, many of the so-called "Occupational Therapy Departments" are run by personnel who lack a basic understanding of the nature and purpose of occupational therapy. The central government has recommended that at least one occupational therapist be appointed for every 250 hospital in-patients, but many of the positions created have not been filled for as long as five years for lack of trained personnel. Only 15 to 20 of 350 occupational therapists in

India are working in the psychiatric field. Suggested reforms include clinical experience in psychiatric work during their training program; treating them as full members of the professional team in the hospital; giving them better pay; and organizing short-term orientation courses in occupational therapy for the other professional personnel in psychiatric institutions (226).

Experiments are now being conducted concerning the use of occupational therapy programs in mental hospitals. One such program was developed at the Hospital for Mental Diseases in Ranchi, to which is attached one of the graduate training centers in Psychiatry. The occupational therapy is differentiated from recreational and work therapy, though the three forms of course overlap at times. Shortages of funds and of trained personnel prevent as yet any widespread inclusion of such services in the treatment of the mentally ill, but at least a beginning has been made especially in the direction of stressing the need for these services in their treatment (354, 355).

Hospital architecture also needs considerable improvement, for although some hospitals like the mental hospital at Agra are adding new wards and buildings, too many remain like the military barracks and prison-like cells of the mental hospitals at Bareilly and Varanasi.

Rapid development of facilities for training psychiatric personnel is urgently needed. There must be some means of attracting professional personnel to the field of mental-hospital service. Psychiatric social workers are needed in each hospital, but the Mental Hospital, Madras, is probably the only institution employing as many as 14 psychiatric social workers, and the mental hospitals of Uttar Pradesh and many other states have no social-work services at all (274).

At present any rehabilitation of the mental patient that may occur results from the initiative of individual social workers. Patterns of rehabilitation services should be organized as community welfare projects, with eventual provision for them at the state level (418). This could lead to the organization of a com-

prehensive community mental health program, to provide necessary services through a system of psychiatric units for all types of mental disorder and emotional problems, with adequate consultant service for families, courts, and public and private health and welfare agencies (274).

Only in the past few years have special units been established in mental hospitals for the in-patient treatment of adolescents. Cases include varied forms of maladjustment, in the family, at school or at work, and toward society — personality disorders, and some psychotic patterns. Ages range from 12 to 17. The Adolescent Unit at Hangor Village Hospital is separate from the rest of the hospital; it consists of a villa with two wards for eight boys and for eight girls. The sexes are separated in the wards and day-rooms, but they come together for school classes and for occupational therapy. There is a special school with two teachers within the hospital grounds; the youngsters attend classes four mornings and two afternoons per week. Normal education is provided, although material is adjusted as much as possible to meet individual needs. The group occupational therapy activities include art and handicrafts, music appreciation, reading of plays, dancing, and physical exercises. There is also drawing with pencil and crayon (both individual and group instruction); water-color painting; basket-making and pottery; woodwork with outlets such as hammering and sawing for boys; knitting, embroidery, and simple dressmaking for girls; writing of plays for the puppet theatre, plus the making of puppets. The occupational therapist may also serve as a confidante and advisor in matters such as dress (252).

Emotionally maladjusted children and adults are served by the Bombay Children's Aid Society, which has established a home for mentally deficient children. In India as in other countries no clearcut distinction has yet been made between the emotionally disturbed and those with limited intellectual capacity. Mental-health facilities and services thus usually include the mentally retarded, and the starting point for provisions of assistance for those with emotional problems is often a center with general services for the mentally retarded. For example, in the states

of Delhi, Madhya Pradesh, and Madras four organizations for retarded children have been established which are officially considered to be mental health services, and the Indian Council of Mental Hygiene has started a Demonstration Child Guidance Clinic to help such children. One agency with differentiated mental health services is the Indian Institute of Mental Health and Human Relations, a psychotherapeutic center offering clinical services for all age groups for the promotion of mental health; in 1953, for example, it organized maternity and child welfare clinics to aid expectant mothers with nervous disorders (274).

The number of emotionally disturbed children treated in Child Guidance Clinics continues to be limited by the fact that for lack of alternative provisions many mentally retarded children are brought to these clinics for assessment and referral even though no emotional problems are involved. When these needs can be met in other programs, the limited Child Guidance facilities should become available for a larger number of maladjusted children. Such a development will be accelerated when a clearer distinction is made between the needs of the mentally ill and of the mentally retarded, categories which are still illogically grouped together in the thinking and planning of even highly developed countries.

The amount of research dealing with the problems of mental illness and emotional maladjustment is steadily increasing. *The Indian Journal of Psychiatry*, published by the Indian Psychiatric Society, has drawn attention to the need for basic research in solving problems related to the identification, treatment, and rehabilitation of the mentally ill. An example of the growing interest in a research approach is that of a 1967 study of 100 preschool children attending a play center in a suburban community, of whom 30 manifested abnormal behavior. The definition of normality, methods of obtaining information, and interpretations of data were all carefully considered in this questionnaire-and-interview investigation (415).

It can be expected that the dislocations attending India's gradual shift from a simpler agricultural economy to a more complex industrialized one, the movement from village to urban life, and the breakdown of the extended-family system, will inevitably produce more of the kind of emotional problems found with increasing frequency in western cultures, where such changes began at an earlier time. As in these other countries, there will be a growing realization of the need for a broader program of mental health services to aid those affected by a developing "age of anxiety."



PART II: THE SOCIALLY MALADJUSTED

In India social maladjustment is increasingly defined as a handicap which is most amenable to treatment through rehabilitation services.

Industrialization and urbanization are related to the growing problem of delinquency. Recent studies have found the chief types of delinquent behavior to be truancy, gambling, drinking, sexual offenses, smoking, and going to movies, though there was no indication as to why the last two were listed as delinquencies. The chief causes seemed to be unhappy home life, parental negligence, over-indulgence, poverty, and death of parents (455, 456, 457).

The classification of juveniles for determining responsibility for antisocial acts was an initial problem in making these studies. Whereas the Indian Penal Code 1860 specified that a child under seven years of age is not responsible for any offense he commits, the Bombay Children Act 1948 extended this age to 12 and called the child between the ages of seven and 16 who commits an offense a "youthful Offender" (387). The national Children's Act defines a juvenile as a person under 18 years of age, but Section 6 of the Probation of Offenders Act gives protection to persons up to the age of 21.* Provision for a corrective approach

* Other legislative provisions that affect delinquent youth are discussed in the section on Child Welfare Services, since many of the laws and related services concern both neglected and delinquent children.

when dealing with children who are in trouble with the law was made in various sections of the Criminal Procedure Code (1898), which followed Reformatory Schools Acts in 1876 and 1897 that established reformatory schools for delinquents below the age of 16 and made it possible to release boys on probation. State legislation based on this national legislation has been passed.

Public concern in Bombay over the mistreatment of children before and after delinquent acts led to the Bombay Children Act 1924, amended in 1948. The Union (national) Children Act of 1960 deals with only three types of children — destitute, uncontrollable, and young offenders — but the Bombay Act deals with four types — destitute, uncontrollable, victimized, and delinquent. Implementation of this Act depends on juvenile courts, the police, various institutions, probation officers, remand homes, after-care hostels and child guidance clinics. There is considerable variation in the way in which the functions of these various agencies are coordinated. Lack of a sufficient number of institutions, or adequately operated institutions for physically or mentally handicapped children leads to conditions of overcrowding and long waiting periods in remand homes. Placement is sometimes inappropriate for lack of careful prior investigation of the child's needs. Schools for incorrigible children do not meet their needs because they are either too open, which permits easy running away, or too large and overcrowded, with no individual attention (223).

Although most states have regular police who deal with juvenile offenders, Maharashtra and one or two other states have special police units called Juvenile Aid Police Units for this purpose, including both men and women. The Bombay Children Aid Society was asked in 1953 to train and organize the first unit of this kind. The functions of these units are gradually being made more comprehensive, with an emphasis on prevention and on public understanding. The Juvenile Court stresses informal procedures, protection and rehabilitation of child offenders, and safeguarding of the rights of both children and adults. The workers handling the social treatment of the youthful offender

are probation officers, institutional case workers, after-care workers, and superintendents of institutions, in addition to medical officers. Physical training, recreation, and more attractive clothing and housing arrangements are being emphasized. Since most children coming to the institutions are educationally backward and have little interest in education as such, practical or vocational training is stressed. A larger proportion of trained professional personnel versus untrained employees is needed (387).

After-care services are being expanded through the efforts of groups such as the Maharashtra Probation and After-Care Association and the Navajeevan Mandal, Poona, which provide some hostel facilities. Impetus for such expansion was given by the 1958-59 state program in which a network of district shelters, reception centers, and state homes was established. This network accelerates the rehabilitation process for persons from correctional institutions and for those from institutions for the destitute and for the physically handicapped. These centers provide supplementary treatment and training aimed at eventual integration into the normal community, and are examples of coordination of public and voluntary agencies. There are four State Homes (one for males and three for females) with a total capacity of 300, and four District Shelters and ten Reception Centres with a maximum capacity of 350. There is more turnover at these shelters and centers than at the homes. The development of provisions to take care of waifs and potential delinquents has been slow. Many physically and mentally handicapped children are among those who roam homeless through the streets of industrial cities. Sir Rustom Masani in 1915 tried to focus attention on the needs of the waifs of Bombay, but it took nine years to secure the Bombay Children Act and three more years to obtain machinery to implement the Act. It took still another 12 years for the first cottage-type institution to appear, though this model institution at Chembur suffered neglect during World War II (387).

An adequate probation system, with "Home Treatment" involving suspension of punishment and provision for personal care

and supervision in the youngster's own home, is needed. This system is authorized by the Central Probation of Offenders Act, 1958, in the state of Rajasthan, and has been put into effect in all its 26 districts. This Act stipulates that the courts may consider the possibility of probation for offenders under 21 as for those over 21. For a person under 21 who has committed an offense not punishable by life imprisonment, the court shall not pass sentence without recording its reasons for doing so, and before ordering release under probation the court shall take into consideration the report of the Probation Officer if one has been concerned with the case. The state government has appointed a District Probation Officer in each of the 25 districts to undertake the probation work in addition to his duties as Social Welfare Officer (457).

The Probation of Offenders Act thus distinguishes between offenders below 21 and those above that age, and also between those guilty of offenses punishable by death or life imprisonment and those whose offense carries a lighter punishment. Judges have absolute authority in making decisions regarding those over 21, but for those below 21 an injunction is issued to the court not to imprison them unless there is clearcut evidence that this is necessary and justifiable. Though the testimony of the probation officer is important in this determination, the reports of these officers are not always called for by the court (457).

The problem of rehabilitation for delinquents may be especially complex in the case of youngsters coming from certain tribes with very poor living conditions, poor home situations, and adult encouragement of antisocial behavior, as indicated by a study of 25 delinquents coming from the Bhil tribe in Rajasthan (228).

Group delinquency is a matter of increasing concern to police, who previously have been preoccupied with adult crime. A two-year study was made of 40 juvenile gangs in Varanasi City based on interviews with law enforcement officials, parents, teachers, and others working with these youths. The delinquents prey on the thousands of pilgrims who come to bathe in the

holy water of the Ganges. The social structure of the city is generally permissive, with weak control over its children. Stealing is the most common offense (80% of the cases). (One factor pointed out is the continuing attitude of local police that the control of delinquents is primarily the responsibility of parents, teachers, and peers, and their feeling of hostility toward welfare agencies and social workers).

Most children sent to an institution are found to be emotionally disturbed to a serious extent. During the year 1964, 25,433 boys and 2,706 girls appeared before juvenile courts in India, of whom 23% were sent to institutions. Such institutions in that year included 98 remand homes, 119 children's homes, and 108 certified approved schools. The primary purpose of the institutionalization is not to punish the child but to help him by teaching him self-discipline, self-respect, and self-direction. The incidence of emotional problems and personality disturbances among them has led to the development of a new service of cottage parents or house parents. Since many of the children have previously experienced disturbed family relationships, the importance of adequately selected and trained cottage parents is stressed (159).

The problems of juvenile vagrancy and begging led the Social Welfare Department of Uttar Pradesh in 1955-56 to open an institution for 50 children under 16 years of age who were generally destitute or who came from a poor socio-economic background. This school sought to protect them from exploitation and to give them useful trade training. The state Jail Department operates two care institutions for juvenile delinquents at Bareilly and Lucknow, which have programs of general education, trade training, physical education, and recreational activities (269).

In each of the 13 districts where the Children Act of 1951 is being enforced in the state of Uttar Pradesh, a special Juvenile Court has been established, a Reformation Officer has been appointed to supervise the youthful offenders placed under his jurisdiction by the Juvenile Court, and an Observation Home or detention center has been organized. Three Approved Schools

(reformatories) have been founded by the state government for youngsters admitted by action of the Juvenile Courts. Here they obtain general education as well as vocational training in carpentry, tailoring, cane-work, basket-making, and hosiery-making. These, however, are only for boys, and another such school is needed for girls. Suitable orientation and training for police officers is also needed, since treatment of offenders is often "outmoded and rigid." Observation homes need teachers for general education and craft instruction (269).

In 1961 the Uttar Pradesh State government approved a budget for establishing one Approved School in Lucknow, a custodial and correctional institution for 100 juvenile delinquents. The school building is old and inadequate and has no playground. A psychosocial study of the boys was made by means of interviews and questionnaires. Most were 13 to 15 years old, and two-thirds came from urban areas, from middle or lower middle class homes. Of the misdeeds, 44% were convicted for vagrancy, 30% for theft, and 24% for picking pockets. About 70% came from undesirable or broken homes, and only 2% belonged to well-to-do families; 48% were indifferent toward their homes, and 29% actively disliked their past home life. In large families the younger children more frequently become delinquents because the first few children receive more attention and care from the parents (359).

It was felt that the treatment methods were inadequate. The training program was unsystematic, the scope of this training was limited, and the school itself lacked adequate equipment, recreation, and cultural activities. Discipline was poor, and attitudes of school authorities and inmates toward each other negative. It was recommended that efforts be made to create a happy environment with ample outlets in sports, education, and practical training.

A comprehensive plan to prevent or to deal with delinquency must: (1) protect children from unfavorable living conditions that involve moral danger, cruelty, exploitation, or neglect; (2) take steps to prevent situations from arising which lead to maladjustment and delinquency, including the prevention of begging, tru-

ancy, and vagrancy or waywardness; (3) control social influences harmful to children; and (4) give technical and non-institutional guidance to delinquents, potential delinquents, and their families at designated centers (456).

Better coordination of efforts to prevent and to deal with anti-social behavior is needed. In 1968 the Ministry of Home Affairs of the Government of India decided to coordinate the work of police forces all over the country, and also to coordinate all official and unofficial Social Defence agencies in programs of crime prevention. This decision resulted from awareness that crime had increased faster than the population growth itself would explain; for example, from 1961 to 1966 the number of recorded crimes increased from 626,651 to 794,733, or an increase in the crime rate per 100,000 population from 143.0 to 159.4. In one year, from 1965 to 1966, there was a 3% increase in the total number of arrests. The percentage increase in 1965-66 was highest for the city of Madras (59.0%) and for the city of Bombay (33.9%), with crime rates per 100,000 for these two cities of 551.4 and 557.6. In India as a whole juvenile delinquency rose 5.2% in that year, and 61.8% of the offenders were in the age group between 16 and 21, though juvenile crime constituted only 2.8% of the crime total for 1966. Although the crime and arrest rates are lower than in most western countries, there is concern about the rate of increase, and the fact that about 1,200,000 persons go to prison each year, and the daily prison population averages 155,000 (456).

The dimensions of crime in India are not nearly so serious as in the U.S.A. For example, while there were 143,179 "cognisable offences" in 1966 in the most heavily populated state of India (Uttar Pradesh), with an average of 172.5 cases per 100,000 of the general population, there were at that time in the state of California 419,788 cases, or 4,904.6 cases per 100,000 of the state's population. But these figures are rising in India as elsewhere, since the overall 1966 Indian average of 159.4 per 100,000 of the population has increased from an average of 143.0 in just five years.

In spite of this, the actual number of persons held in prisons has decreased because of increasing stress on systems of parole and

probation. Imprisonment or punishment is not the answer. Genuine rehabilitation of offenders must be the ultimate goal (455, 456, 457, 458).

The role of the Police has . . . changed from that of an oppressive and coercive law-enforcing agency to that of a social welfare agency (13).

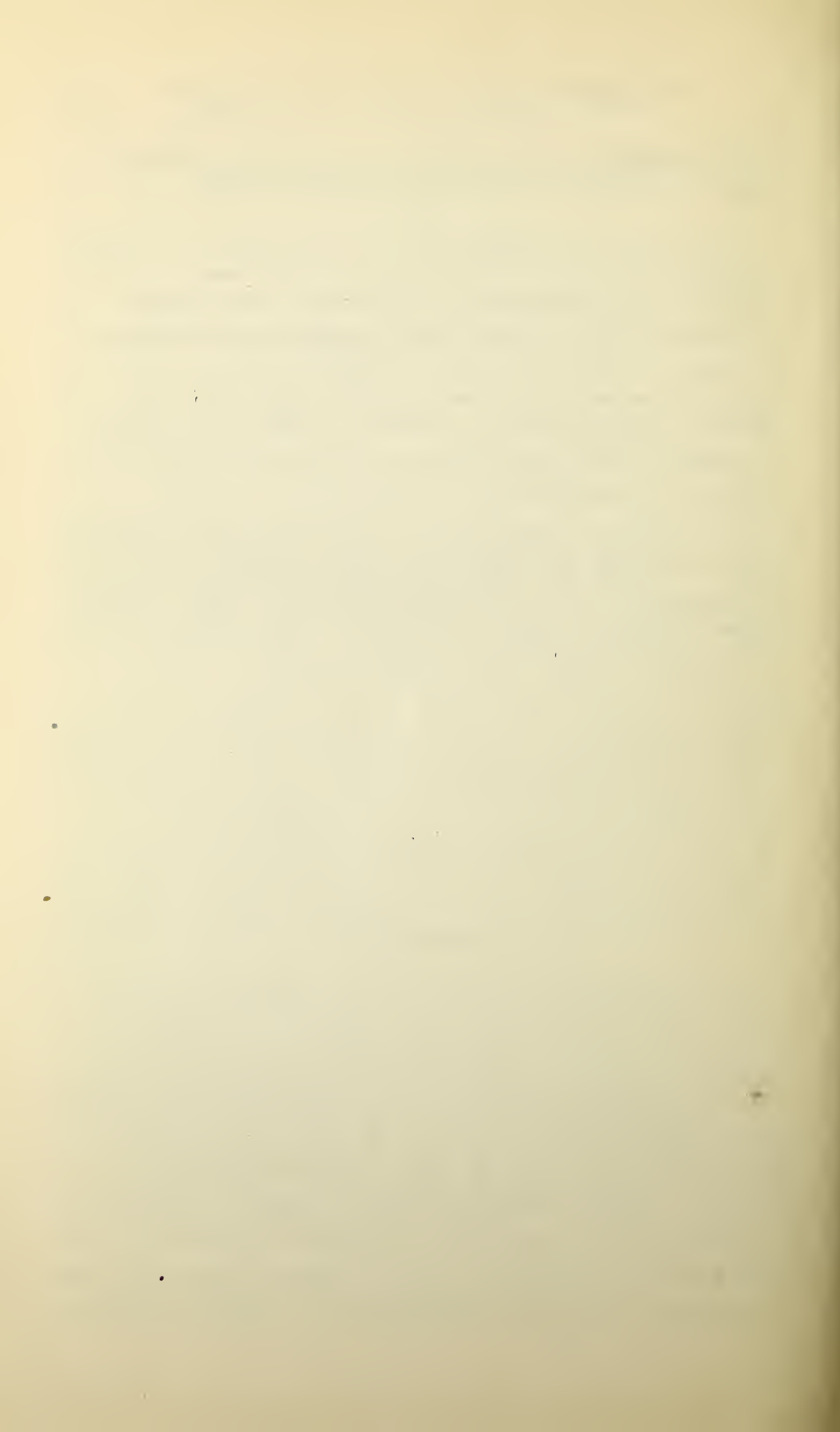
Emphasis on correction rather than punishment is illustrated by changes introduced in some areas in Gujarat in 1967. In September of that year a Jail Guards Training School was started in Sabarmati, with academic and physical training for this group, and headed by a Jail Officer who is a trained social worker. Prisoners with sentences of less than six months are kept in sub-jails, with further distinctions in accommodation made for those 16 to 23 years old, for women, and for those with contagious diseases. An Open Jail in Amreli, started in February 1968, provides a further stage between imprisonment and return to the normal community. Efforts are being made to classify and treat prisoners on the basis of the diagnostic assessment of a variety of medical, personal, and social factors. Vocational training programs are now offered in carpentry, soap-making, leather-work, tape-making, and agriculture, with emphasis on basic academic and social education when necessary (342).

In line with the 1955 United Nations Standard Minimum Rules for the Treatment of Prisoners, the Government of India recommended that states include in their official plans provisions for appointing welfare officers to keep in touch with prisoners while in jail and after their release, and also to act as liaison between them and their families. Some beginnings have been made in attaching such officers to important jails in several states. In Delhi there are two sets of welfare officers, one to work with prisoners while in jail and the other provided by the Social Welfare Department to assist the ex-prisoner in his community adjustments. The welfare

officer is supposed to be between 21 and 30 years of age, with a degree or diploma in professional social work (158).*

Rising rates of delinquency and crime are probably an inevitable consequence of the accelerating social processes of industrialization, urbanization, and diminishing sense of responsibility of family and community for their members. But an intensive study of the causes of antisocial behavior, provision of a greater variety of social services, improvement in the procedures and facilities for dealing with offenders, and emphasis on rehabilitation rather than punishment are expected both to reduce the rate of increase and to return more offenders to a useful life.

* Improvements in the system of after-care for delinquents and destitutes are being based on research such as a 6½ year project on the theme — "Impact of Institutions on Socially Handicapped Children", undertaken since 1965 by Mr. S. D. Gokhale, Hony. Research Director, Research Bureau of the Indian Council for Social Welfare, Bombay, with a grant from S.R.S.



Chapter 12

SUMMATION

THE ROLE OF VOLUNTARY SOCIETIES

Voluntary organizations have made important contributions in the development of programs for the handicapped from the time services were initiated down to the present.

When India became independent, ambitious plans for a welfare state envisioned a primary role for government, with a gradual reduction in the need for voluntary services for the handicapped. The magnitude of the task soon made it clear, however, that voluntary organizations were essential in helping to provide the quantity of services needed and in upgrading the quality of services. It was evident that the most fruitful pattern would be one of intimate collaboration between government and voluntary agencies. As a result voluntary groups continued to increase in number. There are at present over 600 registered organizations, which get either complete financial support from the government, as in the case of the Family Planning Programme, or a major portion of their expenses (434). In Madras State the total of 197 such organizations that had appeared between 1901 and 1951 increased to 411 between 1951 and 1965 (295).

A complete official list of all functioning voluntary societies, with a description of their purposes and activities, is still needed. The Central Social Welfare Board has a list of the organizations it has aided, but this list shifts from year to year, and not all existing voluntary societies are included in any single annual tabulation. Thus there is no central listing of approved voluntary associations

such as the one published in England by the Central Council for the Disabled.

The National Archives of India maintain records providing detailed information concerning the development of voluntary agencies during the eighteenth and nineteenth centuries. This voluntary work started primarily on a religious basis, and was influenced by the ideas though not necessarily the form of programs in western countries. By the early twentieth century, the religious basis was being replaced by a kind of rationalistic, humanistic tradition characterized by a strongly intellectual emphasis with an appeal to the intelligentsia rather than to the masses. Voluntary societies continued to be important after independence, and were assisted by the formation of the Central Social Welfare Board, which gave them financial and technical aid. In India government services are not expected to replace voluntary effort, since it is accepted that voluntary agencies have a certain flexibility of action, willingness to experiment, and close personal touch with their clientele which governmental agencies often do not have. Of the 10,000 voluntary groups (about 1,000 of which operate in rural areas), 6,000 have sought aid from time to time from the Central Social Welfare Board. There are approximately 70 national voluntary associations with branches and field units in different states (87).

Most of the *National* voluntary organizations have appeared relatively recently. Only one is a century old, nine have had a Golden Jubilee, and 15 have celebrated Silver Jubilees. More than half have their headquarters in Delhi, and about 20% are in Bombay. The Delhi location apparently facilitates the maintenance of continuous contact with government departments concerned with welfare and other social services.

The nomenclature for the chief executive in these organizations varies: in 40% of them the General Secretary is the chief correspondent, in 32% this person is called the Secretary, and in 8% he or she is called the Executive Secretary. Only in a few cases is this executive a full-time paid person, though some organizations are now adopting the western pattern of appointing an executive on this basis, in addition to the elective post of a General Secretary.

This attempt to combine western and traditional patterns has led to some confusion and conflict in defining the relative roles of the elected and paid officers.

Membership in the all-India groups may be individual or institutional, and ranges from 10 to over 100,000. Only 4.5% of these agencies are functioning in all the states, and 24.2% in nine to 15 states. The fields of social welfare work emphasized include welfare of the handicapped (27%), general community welfare service (11%), and the welfare of women and children (9%).

Financial support comes from a variety of sources: donations (in 74% of the organizations); membership subscriptions (83%); sales proceeds (45%); government grants (66%); international aid (29%); fund-raising campaigns (3%); and affiliation fees from their branches (4.5%). At present only half a dozen of these organizations get administrative grants from the central government, which range from 2,000 to 25,000 rupees per year.

Among *local* voluntary organizations, 22.5% appeared in the decade of the 40's, and more than twice as many (54.4%) in the following decade of the 50's. Thus about half of the local societies emerged after the establishment of the Central Social Welfare Board in 1953. For various reasons the formation of new agencies slowed down during the 60's, partly because the aim of the Third Five Year Plan was to consolidate and improve the work of existing bodies rather than to expand the number, and partly because of a lack of financial resources for founding new societies (87).

On the average a local welfare agency services a population of 86,617, and an area of 603 square kilometers, with of course wide variations from one state to another. In general it appears that in spite of the growth in the number of such organizations they are still insufficient to meet community needs. These local agencies are engaged in fields such as child welfare (40%), welfare of women (49%), general welfare (8%), and only 4% in work for the handicapped. The great bulk of the services for the handicapped thus come through national rather than local organizations.

Programs of services of voluntary agencies in India have changed emphasis:

1. from social reform to social welfare services;
2. from custodial care to permanent rehabilitation of the destitute;
3. from institutional services to community welfare services;
4. from special institutions and schools for the handicapped to integration in regular schools;
5. from free services to the charging of token fees; and
6. from curative and treatment services to preventive services.

New specialized services are appearing which require a higher level of technical skill on the part of personnel, such as creches, day-care centers, hostels for working women, child guidance clinics, day centers for the aged, social clubs for working youth, and family counselling services (87).

Government agencies now more frequently appoint voluntary workers to committees in charge of after-care homes and welfare projects and to the central and state Social Welfare Boards that supervise social welfare programs. It is reported that this involvement at the national level in managerial and supervisory capacities has resulted in some dissociation of these workers from local welfare efforts.

The staffs of voluntary organizations have these characteristics;

1. Usually the chief executive is an elected voluntary worker.
2. At the local level there are almost no professional staff members.
3. Education of staff members is limited, and only 9% have a Bachelor's degree.
4. Salary scales are poor, and only 3% get a salary over 200 rupees per month.

The pattern of financial support has changed. There are fewer wealthy individual donors, and community donations must be shared with a large number of organizations as welfare agencies have

increased in number. Religion is no longer a strong motivating force in producing contributions. Higher living costs and higher salary scales for personnel have strained the ability of welfare agencies to operate existing services even at a minimal level. The central government now provides a higher proportion of costs in relation to the state governments; for example, the Central Social Welfare Board, which in 1953-54 supplied 2.44% of the expenditures of social agencies, contributed 14.15% with grants in 1960-61. While the total resources and average income of voluntary groups have increased in recent years, needs grow more rapidly than funds (87).

Most of these organizations have a similar structure since they are registered under the Societies Registration Act of 1860. Only in a few agencies do all the members of the board or executive committee actively participate, and in some instances one or two office-holders are the only workers. Some persons who join boards appear to be more interested in political influence and power than in service. The uneven distribution of services throughout the country indicates the need for an overall social welfare program in which government and voluntary efforts are better coordinated, and in which there is more efficient cooperation among the voluntary groups themselves.

In summary, the services of voluntary agencies now have a more nationalistic than religious emphasis. More specialized services are being emphasized such as those for blind and mentally retarded children. A mass or group approach is becoming a more individualized approach. Organizations are operated on more businesslike lines. Agencies are formed increasingly on the national level, moving away from a strictly local approach to social problems. There are now more women than men in the general field of social welfare; most of these women are well educated, come from middle and upper-class families, and are in the age range from 40 to 50 years. The need for paid workers with more formal training is being recognized, which will necessitate adjustment between professional and voluntary workers. The pattern of welfare services increasingly reflects western practices. Voluntary efforts are increasing — the number of social agencies

nearly doubled in the decade 1951-1961—and their income is increasing, even though rising costs make these resources inadequate. An overall social welfare program and system for making grants is needed to prevent further haphazard development of social services. More support needs to come from a larger number of small contributors. The payment of token fees is now common as a substitute for free services. Affiliation with international organizations makes possible valuable consultative service to Indian groups (87).

Only recently has the Indian woman begun to leave the traditional seclusion of home and family life to adopt a role based on a new concept of social responsibility and to assume community duties that bring her in contact with many people outside the home. There are still only a few women from the upper social classes who have ventured into public life, but efforts are now being made to assess the potential for social service of larger numbers of Indian women.

One study with this objective has investigated the extent of leisure time available. A random sample of 50 women from middle and upper-class families in ten localities in Lucknow, averaging about 36 years of age, were interviewed to determine the ways in which they spent their leisure time. The amount of leisure time enjoyed each day was: 28% two hours; 24% two to four hours; 28% four to six hours; and 20% six to eight hours. Housewives in joint families have little free time, nor do employed women who usually still have domestic tasks to occupy the hours after work. Card playing was of greater interest than sports, although 98% preferred just chatting, as the least expensive and most readily available form of recreation. Also 94% enjoyed reading; 78% were keenly interested in crafts; and 90% liked to attend movies (222).

Of interest is the fact that women from higher socio-economic backgrounds liked the prestige that is coming to be associated with social service programs, which gain them status and respect in their community. Forty per cent of the subjects were interested in welfare activities such as child welfare, women's welfare, wel-

fare of the poor and handicapped, and the welfare of veterans and their families.

This study indicated that most of the women interviewed had an adequate amount of leisure time but did not use it as fruitfully as possible, in the direction of enriching their personal lives, creating interests, developing skills, and in general adding to their mental, educational, and physical development. There is thus as yet inadequate utilization of this reservoir of potential assistance for various programs of services for the handicapped.

Illustrations of the central importance of voluntary provisions in meeting the needs of the handicapped can be found in every state. One example is the following list of voluntary organizations providing various kinds of rehabilitation services in the state of Madras (295):

Children's Orthopaedic Centre operated by the Andhra Mahila Sabha, a women's organization, for about 50 residential children and some out-patients. Transportation is provided for the latter, along with general services of physical therapy, occupational therapy, and primary education.

Society for the Welfare of the Handicapped whose chief function is public education concerning rehabilitation.

Raphael-Cheshire Home-Rehabilitation Centre, which is planned to be a vocational rehabilitation center for 100 physically handicapped adults.

Mylapore Round Table Rehabilitation Centre, an organization that has established a training center in "white-collar" jobs such as typing and shorthand.

Rotary Rehabilitation Centre at Kumbakonam, a production-cum-training centre for about 30 physically handicapped adults.

Christian Medical College Hospital, Rehabilitation Centre for ex-leprosy patients, for vocational training and production.

Service clubs like the Rotary Clubs and Lions Clubs have given considerable assistance to the handicapped. The Lions Clubs

in India, the first of which was founded in 1956, have undertaken a variety of projects to help the handicapped, each club choosing its own particular emphasis. The Lions Club of Bombay, for example, has given special attention to projects concerning the blind and the prevention of blindness. By 1960 the Lions Clubs throughout India, by means of an Eye Glass Bank, had distributed over 10,000 pairs of eye-glasses. They have also organized Eye Camps where thousands of persons have been examined and treated for the conservation of their sight (280).

An example of similar service-club efforts for the benefit of the handicapped is that of the Calypso Night and Carnival held in Madras in 1967, to aid the Rehabilitation Training Centre for the physically handicapped, sponsored by the Mylapore Round Table No. 3. This is a community-service organization, along the lines of Rotary, for men 18 to 40 years of age; the first chapter was formed in India in 1957. The formation of rehabilitative vocational training programs for orthopedically handicapped persons was its major objective in 1963: (1) stenography and typewriting; (2) bench fitting and simple machine operations, and (3) type setting. The first "Calypso Night," consisting of a dance and cabaret program, was held in April 1964 to raise funds for the building and capital purchase of the Centre. It was inaugurated with classes in shorthand and typing in February 1965. The type-setting classes started in February 1967. Trainees are paid a small stipend plus a travelling allowance to and from the Centre. The long-range plans for the Centre include some housing facilities, plus canteen and recreational facilities.

An annual tea party for crippled children of the city of Bombay, held in conjunction with the Annual Prize Distribution of the S.E.C. Day School, helps to draw public attention to the needs and capabilities of handicapped children. The disabled children are invited by means of newspaper announcements and personal approaches to all hospitals and organizations concerned with the rehabilitation of the disabled. The party held in April 1965 was attended by 150 crippled children, in addition to blind, deaf, and mentally retarded children who were invited for the first time to participate. The city government cooperated by provid-

ing transportation for the children from all the hospitals in Bombay. A variety program was presented for their entertainment, with performers furnishing their services free of charge (22).

Voluntary organizations also publicize the needs and capacities of the handicapped in India through the celebration of the annual World Day of the Disabled and World Week of the Disabled.* The World Day of the Disabled is observed on the third Sunday in March throughout the world. It was originally established in 1960 by the Federation Internationale des Mutilés et Invalides du Travail et des Invalides Civils, and has been celebrated in India since 1964 under the leadership of the Indian Society for Rehabilitation of the Handicapped. Nearly all the local organizations who now sponsor celebrations of this day are affiliates of this society, which is concerned with five handicapped groups — the visually handicapped, the deaf and hard of hearing, the mentally retarded, those affected by leprosy, and the crippled or orthopedically handicapped. Each year a different theme has been used around which the celebrations are centered, such as "Abilities Count" and "Removal of Architectural Barriers." On the occasion of the Sixth World Day for the Disabled on March 21, 1965, celebrations occurred in more than 20 places in India, all but three of which were participating for the first time, and in 1966 more than 30 communities outside Bombay observed the day.

In Bombay the program is organized by the Fellowship of the Physically Handicapped. The day has been observed in a wide variety of ways including lectures, special entertainment, the feeding of leprosy patients and the crippled poor, a Seminar on Cerebral Palsy, Sports for the Handicapped, and prayers in churches. In 1965 a special event occurred when the Governor of Maharashtra State gave a tea which was attended by handicapped persons of all kinds. This was the first time that persons with leprosy had been included in a public social affair. For the program of the Seventh World Day in March 1966 arranged by the Fellowship of the Physically Handicapped, 25 organiza-

* Many of these celebrations have been described each year in issues of the *Journal of Rehabilitation in Asia*.

tions concerned with rehabilitation of the handicapped cooperated with the Junior Chamber of Commerce and a Lions Club in arranging a program centered around the themes of "Architectural Barriers" and "Hire the Handicapped." Included were an exhibit covering the history of rehabilitation and the facilities available for all categories of handicapped persons, a demonstration of the disabled at work, a competition for deaf children, special radio broadcasts, a government newsreel covering the events, and a Lions Club sports meet for the disabled.

The World Day for the Disabled was celebrated by the Federation for the Welfare of the Mentally Retarded in Delhi in collaboration with the Indian Society for Rehabilitation of the Handicapped and the Indian Red Cross Society on March 19, 1967. A picnic and sports events were arranged for 150 mentally retarded, orthopedically handicapped, and deaf children during the day, followed by a seminar on rehabilitation of the handicapped in the evening. Later in the week films on the education of the blind and deaf were shown, and a radio discussion on rehabilitation of the handicapped was held. Similar activities were organized in the city of Madras by a committee composed of members of the local orthopedic center, schools for the blind and deaf, and other voluntary organizations to celebrate the World Week of the Disabled in March 1967. A Sports Day for the blind, deaf, and orthopaedically handicapped was the first event of this kind to be held in the Madras area.

The next year more than 600 handicapped persons from all over India took part in observances for the World Day for the Disabled in Bombay, under the auspices of the Fellowship of the Physically Handicapped and with the support of the Armed Forces and the Artificial Limb Centre of Poona. The Prime Minister, Mrs. Indira Gandhi, made a generous contribution to the cost of the celebration (483).

Public awareness of the needs of the handicapped is also increased by observance of World Health Day on April 7, the anniversary of the day when the Constitution of the World Health Organization came into effect in 1948. For example, in 1962

the theme for this day was "Preserve Sight, Prevent Blindness" (383). Such observances are organized almost entirely by voluntary groups.

It is evident that voluntary societies will continue to play a vital role in the provision of services for the handicapped in India.

PART II: THE ROLE OF INTERNATIONAL AID

A variety of help has come from international agencies in planning, organizing, operating, and financing programs of services for the handicapped in India.* An indication of the variety of these services is found in a United Nations listing of projects and activities in the field of rehabilitation of the disabled during 1966 which included the following organizations: United Nations groups such as ILO, WHO, and UNICEF; American Foundation for Overseas Blind; CARE; the International Society for Rehabilitation of the Disabled; World Federation for Occupational Therapists; the World Rehabilitation Fund; and the World Veterans Federation. For example, UNICEF continues to assist projects on the rehabilitation of handicapped children by providing machinery for prosthetic workshops, equipment for physiotherapy and occupational therapy, and essential imported materials sufficient for a two-year period. The Government of India is subsidizing the expansion of the staff and facilities of the four centers aided by UNICEF: the All-India Institute of Physical Medicine and Rehabilitation Centre, Bombay; the Safdarjung Hospital, New Delhi; the Rehabilitation Centre, Nagpur Medical College; and the Rehabilitation Centre, Madras Medical College. UNICEF also continues to provide equipment for the school of the National Institute for the Blind in Dehra Dun as well as for the Braille Press and workshops, gives stipends for the

* A list of these forms of assistance is given in the government publication *Toward a Fuller Life* (96).

program of training teachers of the blind, and contributes equipment for three regional Braille Printing Departments, and Braille books and equipment for vocational training centers for the blind (449). The Indian family and child welfare program was originally organized with UNICEF assistance, and is still supported to the extent of nearly 30% of its costs (76).

The mid-day meal program of CARE for preschool and primary-school children in India, which started in the state of Madras in 1961 for a total of 500,000 children, now serves 14,000,000 children in 14 states. A typical meal provides 15 grams of proteins and 400 calories, using a special imported and precooked cereal food consisting of corn meal, soya flour, and non-fat dry milk, or a local equivalent developed by the Central Food and Technological Research Institute at Mysore. In addition CARE cooperates with city governments in Bombay, Calcutta, and other cities in the distribution of milk, and includes pregnant women and nursing mothers in its food programs. CARE further cooperates with voluntary agencies and state governments in relief efforts for the victims of famine, drought, and floods in various parts of the country; provides some agricultural tools, seeds, and fertilizers; and donates school kits for classroom use (287).

In 1966 the World Rehabilitation Fund provided fellowships for advanced study of rehabilitation in the United States for five physicians from India and tuition fellowships for an Orthotics and Prosthetics course at the New York University Medical Center for nine other persons, including physicians, occupational therapists, and physical therapists, in addition to the consultative services of two experts on orthotics and prosthetics projects in India (432).

A similar United Nations list for 1967 included the following (450):

ILO fellowships, one for a study tour in Denmark and another for a study of vocational rehabilitation and guidance in the United Kingdom and Sweden.

WHO assistance in medical rehabilitation, through sending an expert to help plan a new school for physical therapy training in Baroda, and another expert to the Government General Hospital in Madras to assist in the improvement of rehabilitation services and physical therapy training there.

UNICEF assistance on rehabilitation projects through provision of machinery for prosthetics workshops, equipment for physical and occupational therapy, and equipment for facilities for the blind.

AFOB assistance to programs for the blind through continued support for the Technical Training Centre of the Blind Relief Association of Delhi, and the Tata Agricultural Centre at Phansa, and supplying a consultant to five state governments concerning programs for the integrated education of blind children.

CARE provision of tools for a rehabilitation center in a hospital in Bareilly, Uttar Pradesh.

RCSB (Royal Commonwealth Society for the Blind) financing of eye camps associated with the hospitals in Vellore and Allahabad, provision of a Landrover for a mobile dispensary operating from the Mehta Eye Hospital and another vehicle for the same purpose at the Madurai Medical College, financing of the costs of these mobile units, and continued support for the Rural Training Centre for Blind Farmers at Phansa.

World Rehabilitation Fund fellowships for training in medical rehabilitation in the United States for four physicians, and tuition fellowships for short courses in New York City for two other persons. In addition the WRF sent four experts to an Indian conference on research in rehabilitation (433).

The Office of Vocational Rehabilitation, later called the Vocational Rehabilitation Administration and now Social and Rehabilitation Service in the U.S. Department of Health, Education, and

Welfare, has aided a number of projects related to the handicapped in India, including the blind, as described in a 1962 issue of *Rehabilitation Record* (234). A recent project is a three-year subsidy for a pilot program sponsored by the Fellowship of the Physically Handicapped in Bombay with the purpose of preparing the disabled for employment in the metal industries (21). Other examples of projects financed by the Social and Rehabilitation Service are given in detailed *Project Descriptions* published by this department:

1. A four-year clinical, physiological, and pathological study of nerve lesions in leprosy, by Dr. N. H. Antia and Dr. K. K. Dastur at the J. J. Group of Hospitals, Bombay, in cooperation with the Acworth and Chembur Leprosy Homes, the Indian Cancer Research Centre, and the Indian Council of Medical Research, Neuropathology Unit.
2. A three-year investigation of the factors in the teaching of medical sciences affecting the use of the team approach for rehabilitating the sick, by Dr. E. M. Holmes and others at the All India Institute of Medical Sciences in New Delhi.
3. A three-year study of the most practical indigenous handicrafts to teach severely handicapped patients, chiefly paraplegics, while under hospital care to enable them eventually to earn a living, by Dr. Ronald J. Garst at the Christian Medical College, Vellore.
4. A three-year experiment with methods of rehabilitating severely disabled cerebral palsied children, by Dr. P. K. Mullaferoze at the Children's Orthopaedic Hospital, Bombay.
5. A three-year investigation of methods of rehabilitating leprosy patients through surgical reconstruction, care and treatment of anesthetic limbs, development of special appliances, low-cost modifications of treatment methods for rural settings, and study of vocational training methods and job placement for such patients, by Dr. Paul Brand at the Christian Medical College, Vellore.

6. A three-year experiment with the development of a program for the rehabilitation and settlement of the blind in the villages in India, by the Tata Agricultural and Training Centre for the Blind, at the village of Phansa.

In 1969 Social and Rehabilitation Service listed a total of 73 new or continuing research grants in India, varying in duration from 18 months to five years, in the following fields (241):

Aging and chronic illnesses	6
Burns	4
Leprosy	7
Burns and leprosy	1
Cardiovascular disorders	3
Child health	1
Community planning and social welfare policy	6
Family life	2
General rehabilitation	6
Maternal health	1
Mental retardation	3
Neurological and neuromuscular disorders	6
Prosthetics and orthotics (including the orthopedically handicapped)	7
Speech and hearing	4
Training and employment of social workers	1
Visual defects	10
Youth welfare and delinquency	5

Six of the new projects listed were at that time awaiting clearance from the Government of India.

The American Foundation for Overseas Blind is offering assistance to a number of other projects concerned with training the blind for industrial employment. The foundation trains Indian staff members in Kuala Lumpur and donates machinery and special equipment. Projects thus aided are under way in several states, including Madhya Pradesh, Mysore, and West Bengal (174).

Handicapped children may be able in the future to share with non-handicapped children the advantages of the system of Sponsorship initiated by the International Union for Child Welfare.

As a result of a visit of the Secretary of this organization to India in 1966, the International Union for Child Welfare set up a Co-ordinating Committee, the India Sponsorship Committee, composed of representatives of participating agencies and an administrator appointed by the IUCW. The Canadian Save the Children Fund is actively collaborating in this project. In one year's time 100 children from four states have benefited from the program (285).

An outstanding center for research concerning various aspects of leprosy is found at the Christian Medical College Hospital in Vellore, South India, which is under the auspices of the Christian Medical Council. It represents the combined efforts of many missionary groups from the U.S.A., Canada, the United Kingdom, and Australia. Affiliated with the University of Madras, and cooperating with the Schieffelin Leprosy Research Sanatorium, it trains physicians, pharmacists, and nurses, and emphasizes in its activities reconstructive surgery and the rehabilitation of leprosy patients. A number of research projects here have been subsidized by the U.S. Social and Rehabilitation Service (29).

Countries like India with the problem of leprosy to face are aided by the Committee on Leprosy Rehabilitation of the International Society for Rehabilitation of the Disabled, established in 1960 at the Eighth World Congress of this organization in New York City. Among the functions of this Committee is the persuasion of governments, anti-leprosy organizations, and employers that leprosy victims can be expected to resume a normal life and become economically independent once the disease has been arrested. Another function is the preparation of educational materials to be incorporated into the programs of schools for physical therapists and occupational therapists, and the convening of international meetings devoted to the discussion of leprosy.

A variety of publications has also been made available in India from various international organizations such as the International Society for Rehabilitation of the Disabled, and a number of United Nations agencies. To date the United Nations materials

have dealt primarily with rehabilitation, especially in its medical and vocational aspects, but now that there is a specific person concerned with special education in UNESCO, it is hoped that publications and projects in this specific educational aspect of rehabilitation will be forthcoming.

Continuing assistance from United Nations agencies can be expected in the future not only along the lines of sponsoring or supporting pilot projects and basic research, but also in the dissemination of information concerning rehabilitation activities all over the world and the determination of general goals to guide the planning and administration of services for the handicapped. Monographs stressing the social services and psychological aspects of work in basic rehabilitation centers will continue to appear. Cooperation will be given in the conducting of national and international meetings devoted to some aspect of work with the handicapped. A survey of the training facilities for rehabilitation personnel in Asia, Africa, Latin America, and the Middle East is to be undertaken. More attention is being paid to the chronically ill and the mentally ill.

Coordination of the advice and assistance given by various international groups will be provided. Inter-agency consultation concerning the planning and implementation of important projects will be encouraged, and general notification given concerning expert group meetings. Efforts will be made to coordinate the advice given in the frequent short visits made by experts representing different organizations. It has been suggested that once a year there be an exchange of information among United Nations agencies themselves concerning work programs for the year.

Assistance will also be given in the planning and administration of developing rehabilitation services, to avoid poorly organized and overlapping efforts and the ineffective use of national resources. Assistance to the disabled will be extended far beyond the past preoccupations with the blind and the orthopedically handicapped. Contacts between national organizations and international groups which incorporate rehabilitation in their programs will be facilitated.

Emphasis will be given increasingly to the integration of rehabilitation elements in other services. Although help will continue to be given to special projects, it is recognized that in a given country the needs of the disabled might be satisfied more quickly if the services for the ablebodied incorporated and implemented elements now present in separate rehabilitation programs. The United Nations is already cooperating with UNICEF on projects of this kind in several Asian countries, including India. An excellent summary of this purpose was given at a 1964 conference in Geneva (447a):

Regarding the integration of rehabilitation elements with other social services, some disabled persons need only simple information; some a single service like vocational guidance or a crutch; some temporary assistance, for example, for travelling to and back from work during the first few days of employment, etc. These and other services could in many cases be rendered by individuals who do not necessarily work with the disabled but who have basic knowledge and skill in this field. It would be useful if, for instance, all schools of social work included in their programmes some lectures and field work in rehabilitation, and if some of the women's organizations would be acquainted with ways of helping disabled women to look after their household, or if teachers in regular vocational schools would be prepared to accept disabled for training. It would be helpful to work closer with various international agencies and institutions not directly involved in rehabilitation work and introduce elements of rehabilitation into services they render so that they can serve also some of the disabled. Such programmes do not require extra funds, are of more universal character and may satisfy numerous simple needs of the disabled. They are in accordance with the principles of sound rehabilitation, i.e. the integration of the disabled into the normal community.

Another emphasis will be that of developing rehabilitation services at lower administrative levels. Although it has been na-

tural for rehabilitation services to develop earlier and to become concentrated in urban areas, they need to be made available to persons wherever they work and live, and therefore distributed more widely. Decentralization of services will at least make available the simpler rehabilitation services, which also are the kind most frequently needed, directly to the people who need them.

India has long benefited from a diversity of efforts made by individuals and groups from many other countries. But the overall coordination of these efforts and the formulation of long-range goals, whether through United Nations agencies or through some other international organization, will represent an even more effective kind of assistance.

CONCLUSIONS

A summary of developments in India regarding services for the handicapped, as compared with the development of such services in western countries, indicates the following:

1. The more recent achievement of independence of India as compared with other countries means that there has been a shorter period of time for developing self-initiated programs and a system of priorities.
2. The direction of development of services has been similar in that the blind and deaf first aroused public sympathy and concern, with the orthopedically handicapped and the mentally retarded appearing later in the picture.
3. The late-nineteenth-century emergence of the first special programs for the handicapped in India reflects the pattern of southern Europe rather than the earlier development in northern countries.
4. Missionary groups have played a more active role in India than in other countries in establishing institutions and services, although Indian authorities today believe that they have done harm as well as good, and that their function should not be overestimated in relation to indigenous efforts.
5. As in other countries, in India voluntary societies and philanthropic individuals have made initial provisions for the handicapped, with these being subsidized or taken over to an increasing extent by the government.

6. The concept of the appropriateness of voluntary work for women has emerged somewhat more slowly than in many western societies.

7. In India as in other countries better coordination of public and private provisions for the handicapped is needed in order to avoid inefficient duplication of services and to make better utilization of existing services.

8. The present investiture of responsibility for the education of the handicapped in the Department of Social Welfare, after an initial placing of this responsibility with the Ministry of Education, represents a reverse trend to that found in most western countries.

9. There has been a similar initial emphasis on separate, custodial, institutional provisions for the handicapped, with gradually increasing awareness of the need for identification with the family, the importance of an eventual goal of integration into the normal community, and the desirability of including the handicapped child with normal children wherever possible. Only a token beginning has been made so far, however, in integrating handicapped children with normal children in regular schools.

10. In achieving integration of the handicapped into the community as self-supporting citizens, much remains to be done, as to a lesser extent in many western countries, in expanding vocational opportunities through more varied and realistic vocational training, and the changing of attitudes of potential employers toward the handicapped. However, widespread unemployment and underemployment complicate these efforts to a greater extent in India than in most western countries.

11. The categories of the handicapped for whom services are provided or planned are somewhat more limited at present than in more highly developed countries. This of course is understandable in view of the limited resources with which such problems can yet be attacked. Indian experts recognize that eventually other specialized needs must be met as for the partially hearing, the partially sighted, and the speech handicapped.

12. The pattern of incidence for the categories of the handicapped reflects in India a lower standard of living and more limited medical and health services, such as a much higher incidence of tuberculosis and blindness, and the major problem of leprosy. A shorter life span means greater predominance of diseases of the young versus diseases of the aging as found in western societies.
13. Trained personnel are lacking to a far greater extent than in western countries. Programs for the specific training of professional personnel are appearing, but as yet lack official standardization of requirements, curricula, and licensing procedures.
14. The basic problems in India are far greater in view of the numbers needing such services, the limited resources and development of existing resources in the country as a whole, and the overwhelming problems of poverty, disease, malnutrition, illiteracy, and a high birthrate which affect the general population. Successful attack on these problems is essential for any widespread improvement in services for the handicapped.
15. The primarily rural character of the population, the size of the country, the multiplicity of languages, and the difficulties faced in providing adequate transportation and communication complicate the problems of providing services to a greater extent than in most western countries.
16. It is increasingly recognized in India, as in western countries, that services for the handicapped can be developed parallel to those for the non-handicapped, and do not need to await the solution of problems affecting the able-bodied. Similarly the very improvements made in provisions for the handicapped are often found to have useful applications to provisions for the normal.
17. A basic problem here as elsewhere is the overcoming of negative attitudes and misunderstanding concerning the significance of handicapping conditions, which necessitates a broad program of public education and widespread dissemination of information related to the handicapped.
18. The combined humanistic and practical values inherent in rehabilitating the handicapped and making them as far as possi-

ble self-sufficient and contributing members of the normal community are accepted as a basis for current developments.

This final factor, the recognition of the ultimate values of services for the handicapped even though a system of priorities must be accepted, is of major importance in an overall view of the Indian scene. This is evident in the recent government publication *Toward a Fuller Life* (96), in which the objectives of rehabilitation which make it possible for handicapped persons to become useful members of society are spelled out: (1) provision of appropriate medical facilities and treatment; (2) provision of suitable education, as early as possible in the life of the individual; (3) assistance in achieving and maintaining a state of good mental health, including positive psychological attitudes towards the handicapping condition; (4) assurance of a healthful environment, whether home or institution or school; and (5) education of the general public regarding the needs and the worth of the handicapped person.

While recognizing the importance of these goals, some Indian experts maintain that limited resources and the relatively high cost of special provisions for the handicapped will make it impossible to implement such goals to any appreciable extent for some time to come. However, on the basis of their studies and observations of rehabilitation services in many nations in North and South America, in Europe and in Asia, the writers doubt the validity of this conclusion. Rehabilitation services as measured against other medical, social, and educational services are expensive in any country. Whatever the resources of a country, substantial progress in providing such services can be achieved once the public is convinced of their economic and social importance.

BIBLIOGRAPHY

1. Abhisheki, Vidya. "Children's school care committee," *Social Welfare*, XVI (July, 1969), C3.
2. Advani, Lal. "Development of a special education program." In: International Society for Rehabilitation of the Disabled. *4th Pan Pacific Rehabilitation Conference. Rehabilitation: New Talent for the Community*. Hong Kong: Hong Kong Joint Council for the Physically and Mentally Handicapped, 1969, pp. 369-372.
3. Advani, Lal. "The rehabilitees and socio-psychological aspects of rehabilitation," *Social Welfare*, XIII (March, 1967), 15, 30.
4. Advani, Lal. "Training of Special teachers of the blind," *Blind Welfare*, V (August, 1963), 14-18.
5. Ahuja, Suresh C. *Blind welfare in India: Origin, Development and Present Set-up*. Bombay: The National Association for the Blind, 1964.
6. Ahuja, Suresh C. "Home teaching," *Blind Welfare*, IV (January, 1962), 35-56.
7. Ahuja, Suresh C. "I am an insurance agent," *Blind Welfare*, III (April, 1961), 10-12.
8. Ahuja, Suresh C. "Mobility of the blind," *Fellowship*, VIII (June, 1967), 11-12.
9. Ahuja, Suresh, C. "Placement and rehabilitation." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 45-52.
10. Ahuja, Suresh C. "Rehabilitation of the blind." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 58-61.
11. Ahuja, Swaran. "Care of the pre-school blind child." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 20-23.
12. Ajgaonkar, Nama. "New approach to teaching the blind," *Blind Welfare*, VI (August, 1964), 2-4.
13. Ali, Imdad. "The social workers in uniform: police welfare activities in Gujarat," *Social Welfare*, XV (January, 1969), 44-45, 55.
14. All-India Institute of Medical Sciences. *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, 1965.

15. "All India Occupational Therapists Association Conference, January 1968. Seminar on 'An approach to the rehabilitation of cardiac patients,' *The Journal of Rehabilitation in Asia*, X (January, 1969), 38-57.
16. Alpaiwala, R.M. "Report on the progress of the National Association for the Blind." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 111-117.
17. Ananthanarayanan, L. I. "The training of the orthopaedically handicapped." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 144-149.
18. *Andhra Mahila Sabha*. Madras: Iswari Prasad Dattatreya Orthopaedic Centre for Education and Rehabilitation of Children, 1966. Pamphlet.
19. "Anniversary at Carville," *Rehabilitation Record*, X (July-August, 1969), 39-40.
20. *The Annual Report of the Fellowship of the Physically Handicapped 1st April 1964 to 31st March 1965*. Bombay: Fellowship of the Physically Handicapped, 1965. Mimeographed pamphlet.
21. *Annual Report of the Fellowship of the Physically Handicapped 1st April 1965 to 31st March 1966*. Bombay: Fellowship of the Physically Handicapped, 1966. Mimeographed pamphlet.
22. *Annual Report, Society for the Education of the Crippled (Child and Adult), April 1964 to March 1965, & Annual Report, S.E.C. Day School for Crippled Children, June 1964—May 1965*. Bombay: Society for the Education of the Crippled (Child and Adult), 1965. Mimeographed pamphlet.
23. *Annual Report, Society for the Education of the Crippled (Child and Adult), April 1965 to March 1966, & Annual Report, S.E.C. Day School for Crippled Children, June 1965-May 1966*. Bombay: Society for the Education of the Crippled (Child and Adult), 1966. Mimeographed pamphlet.
24. Antia, N. H. "Comprehensive care of the leprosy patient." Paper presented at the Eleventh World Congress, International Society for Rehabilitation of the Disabled, Dublin, Ireland, September 17, 1969.
25. Antia, N. H. "Prevention of deformities and rehabilitation by non-surgical methods." In: International Society for Rehabilitation of the Disabled. *Proceedings of the Tenth World Congress. Industrial Society and Rehabilitation: Problems and Solutions*. Heidelberg: Deutsche Vereinigung für die Rehabilitation Behinderter e.V., 1967, pp. 108-110.

26. Antia, N. H. *Project Description*. Department of Health, Education, and Welfare. Office of Vocational Rehabilitation. International Rehabilitation Research Program. Mimeographed brochure, no date.
27. Aptekar, S. *Maternity and Infant Care Services*. Mimeographed paper, 1967.
28. Aranha, Tressie J. "Child welfare services in Greater Bombay," *Social Welfare*, XVI (July, 1969), 1-3, 28.
29. Arvelo, Jose J. *Rehabilitation in Leprosy*. New York: International Society for Rehabilitation of the Disabled, 1962.
30. Association of the Physically Handicapped, Bangalore, Mysore State, India. "Incidence and distribution—physically handicapped," *The Journal of Rehabilitation in Asia*, VII (January, 1966), 9-15.
31. "Axes and shovels," *Social Welfare*, XIV (September, 1967), 3.
32. Badgaiyan, S. D. "Tribal welfare in India: an anthropological approach," *Social Welfare*, XIV (March, 1968), 1-3, 5.
33. Bakre, H. Y. "Blindness in rural areas," *Blind Welfare*, IV (April, 1962), 15-17.
34. Bakre, H. Y. "Causes of preventable blinders and visual disability in rural areas and how best they can be tackled." *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 44-48.
35. Bakre, H. Y. "Prevention of blindness in the rural areas," *Blind Welfare*, V (December, 1963), 3-4.
36. Balsara, Mehru. *Services for the Rehabilitation of Mentally Retarded Children*. Mimeographed paper, 1967.
37. Banasinska, K. "Teaching aids for blind children," *Blind Welfare*, I (December, 1959), 13-15.
38. Bassa, D. M. "Ahead of American babies, but . . .," *Illustrated Weekly of India*, February 27, 1966.
39. "Battle against leprosy—a battle against social prejudices," *Social Welfare*, XVI (April, 1969), 3.
40. Baumgartner, V. *Non-institutional Service for Children*. Mimeographed paper, 1967.
41. Begum, Masuma. "Child welfare in a new perspective," *Social Welfare*, XIV (December, 1967), 2-3.
42. Besai, Manu, et al. *Pre-primary Care and Nurture of Children*, Mimeographed paper, 1967.

43. "Betel quid cancer," *Roche Medical Image*, XI (June, 1969), 14-15.
44. Bhaskaran, K. "Vocational rehabilitation and the use of normal facilities for the mentally retarded." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 44-47.
45. Bhatia, B. D. "Placement and rehabilitation." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 188-194.
46. Bhatia, B. D. "Preparation and placement of the mentally retarded in normal employment." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*.
47. Bhatia, B. D. "A survey of educational and training facilities." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 182-187.
48. Bhatia, Usha Rani. "The moving stars show a brighter Path: a new experiment in mobility of the blind," *Social Welfare*, XV (December, 1968), 16-18.
49. Bhatnagar, M. M. L. "Rehabilitation of battle casualties," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 38-40.
50. Bhatt, Prabhashankar R. "Inaugural address, Sixth Annual Conference of the All India Occupational Therapists' Association, October 1959," *Occupational Therapy and Rehabilitation in Asia*, I (August, 1960), pp. 40-43.
51. Bhatt, Usha. "A historical survey of services for the orthopedically handicapped." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 115-123.
52. Bhatt, Usha. *The Physically Handicapped in India*. Bombay: Popular Book Depot, 1963.
53. Boi, Gool K. "Institutions for the mentally retarded." In: *Mental retardation in India. Report of the First All-India Conference on Mental Retardation*. New Delhi: Federation for the Welfare of the Mentally Retarded, 1967. pp. 98-114.
54. Boi, Gool K. *Institutions for the Mentally Retarded in India (corrected up to January 1968)*. Pamphlet No. 7. New Delhi: Federation for the Welfare of the Mentally Retarded (India) 1968.
55. Boi, Gool K. "Preparation in the schools of the young mentally retarded for vocational training." In: *Vocational Rehabilitation*

- of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona.* Bombay: States' People Press, 1966, pp. 52-53.
56. The Bombay Institution for Deaf & Mutes. *The Eighty-first Annual Report, 1965-1966.* Bombay: Bombay Institution for Deaf & Mutes, 1966.
 57. *Bombay Random Sample Survey of the Handicapped.* Bombay. The All India Occupational Therapists' Association, 1957.
 58. Bose, A. B. "Plan programmes for welfare of scheduled castes," *Social Welfare*, XVI (April, 1969), 9-10. 24.
 59. 1960-1966; *Brief History and Report on the Start and Development of Indian Society for the Rehabilitation of the Handicapped.* Bombay: Indian Society for Rehabilitation of the Handicapped, 1966.
 60. Brooks, Robert R. R. "Can India make it?," *Saturday Review*, August 9, 1969, 12-16.
 61. Browne, S. G. "The role of rehabilitation in leprosy control." Paper presented at the Eleventh World Congress, International Society for Rehabilitation of the Disabled, Dublin, Ireland, September 17, 1969.
 62. Browne, Stanley G. *Leprosy; New Hope and Continuing Challenge.* London: The Leprosy Mission, 1966.
 63. Bulsara, Jal F. *Introduction to the Seminar (of the Maharashtra Branch of the Indian Conference of Social Work, 1967).* Mimeographed paper.
 64. Cama, Nariman B. "Economic, social and vocational problems for severely handicapped." In: International Society for Rehabilitation of the Disabled. *Practical implementation of rehabilitation. Proceedings of the Third Pan-Pacific Rehabilitation Conference, Tokyo, Japan, April 1965.* Tokyo: Japanese Society for Rehabilitation of the Disabled, 1965, pp. 474-478.
 65. Captain, Queenie H. C. "The formation of state branches of the N.A.B." In: *The Second All India Conference for the Blind.* Bombay: The National Association for the Blind, 1959, pp. 76-81.
 66. Centerwall, Willard R. and Boi, Gool K. "A survey for phenylketonuria in ten of the schools, homes and institutions for the mentally retarded in India," *The Journal of Rehabilitation in Asia*, VI (January, 1965), 35-38.
 67. "The Central Social Welfare Board meets in New Delhi," *Social Welfare*, XVI (July, 1969), 8.

68. Central Society for the Education of the Deaf. *The Memorandum of Association and the Rules and Regulations of the Central Society for the Education of the Deaf (registered under the Societies Registration Act, 1860)*. Mimeographed pamphlet, no date.
69. Central Society for the Education of the Deaf. *Syllabus*. Mimeographed pamphlet, no date.
70. Chablani, T. D. "Philosophy and approach to rehabilitation." In: All-India Institute of Medical Sciences. *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, 1965, pp. 19-22.
71. Chakravarthi, V. R. "Carriages of blind people on IAC services," *Blind Welfare*, VII (August, 1965), 8.
72. Chanda, B. P. "Rehabilitation of the newly blind," *Blind Welfare*, V (April, 1963), 8-11.
73. Chandola, R. D. "Age of human salvage," *The Journal of Rehabilitation in Asia*, II (January, 1961), 14-17.
74. Chandola, R. D. "A beacon of hope for India's handicapped: prosthetic workshop—a meeting place of art and industry," *Social Welfare*, XV (April, 1968), 1-3, 31.
75. Chandola, R. D. "New horizons for Gujarat's handicapped," *Social Welfare*, XV (January, 1969), 19.
76. Chandra, Kailash. "The tragedy of the Indian child," *Social Welfare*, XV (April, 1968), 4-5.
77. Chandra, P. "Rehabilitation facilities in Delhi." In: All-India Institute of Medical Sciences. *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, 1965, pp. 37-40.
78. Chandy, P. J. "Leprosy Mission's welfare work in Kerala since 1900; the Chevayur Leprosy Sanatorium," *Social Welfare*, XV (June, 1968), 16-18.
- 78a. Char, Satyavaty V. *Institutional Facilities for the Mentally Retarded in India*. Delhi: typewritten manuscript, no date.
79. Char, Satyavaty V. "Rehabilitation of the mentally retarded," *Social Welfare*, XIII (March, 1967), 10-12.
80. Char, S. V. *A Curriculum for the Mentally Retarded*. Pamphlet No. 4. New Delhi: Federation for the Welfare of the Mentally Retarded, 1966.
81. Char, S. V. *Federation for the Welfare of the Mentally Retarded, Circular*. Mimeographed sheet, 1967.
82. Chatterjee, M. L. "Facilities of physio-therapy, rehabilitation and post-graduate teaching and training in orthopaedics in Cal-

- cutta." In: All-India Institute of Medical Sciences. *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, 1965, pp. 47-48.
83. "Child welfare workers meet in Delhi," *Social Welfare*, XVI (April, 1969), 13.
 84. "Children with leprosy: 'Why do people run away from us?'," *World Leprosy News*, (June, 1968), 3.
 85. Chinwalla, R. J. *et al. Parent's Education for Home Care and Nurture of Children*. Mimeographed paper, 1967.
 86. Chitnis, V. K. "Eye-camps." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 49-53.
 - 86a. Chowdhary, D. Paul. "Historical development and problems of voluntary agencies," *Social Welfare*, XVI (May, 1969), 6-7.
 87. Chowdhary, D. Paul. "Historical development and problems of voluntary agencies," *Social Welfare*, XVI (July, 1969), 4-5.
 88. Coelho, G. *Child Health in Maharashtra*. Mimeographed paper 1967.
 - 88a. Comments made during group discussions at a Seminar on "Combating Stigma Resulting from Deformity and Disease" sponsored by the Leonard Wood Memorial in New York City, November 6, 1969.
 89. Connor, Leo E. "Determining the prevalence of hearing impaired children," *Exceptional Children*, XXVII (February, 1961) 337-344.
 90. Cooper, S. N. "A national health scheme for prevention of blindness." In: *The Second All India Conference for the Blind*, Bombay: The National Association for the Blind, 1959, pp. 41-43.
 91. *The Dadar School for the Blind, Bombay*. Bombay, Blind Relief Association, brochure, no date.
 92. Damle, P. S. "Vocational rehabilitation in leprosy and burns; special reference to urban conditions." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 73-75.
 93. Dave, Chandra. "Peoples' participation in leprosy rehabilitation," *Social Welfare*, XV (February, 1969), 22-23.
 94. Department of Economic and Social Affairs. *Study on Legislative and Administrative Aspects of Rehabilitation of the Disabled in Selected Countries*. New York: United Nations, 1964.

95. Department of Social Welfare, Government of India, *Dawn of a New Life*. Delhi: Central Social Welfare Board, brochure, no date.
96. Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967.
97. Desai, H. J. M. "Rural employment," *Blind Welfare*, VI (December, 1964), 6-11.
98. Desai, H. J. M. "The Tata Agricultural & Rural Training Centre for the Blind, Phansa, first pilot project of its kind in Asia." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 104-110.
99. Desai, H. J. M. "Vocational rehabilitation and the use of normal facilities: the blind." In: *Vocational Rehabilitation of the Handicapped: Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 14-21.
100. Desai, P. P. "Preparation of young blind adults in schools for vocational training." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 24-25.
101. Dev, Brahm. "They also dance," *Social Welfare*, XIV (February, 1968), 16-17.
102. Dhar, B. N. "Plea for the mentally retarded," *Social Welfare*, XIV (April, 1967), 6-7.
103. Dharap, N. D. "Mobility of the orthopedically handicapped," *Fellowship*, VIII (June, 1967), 14-15.
104. Dharmendra, Dr. "Socio-economic problems of leprosy patients," *Social Welfare*, XVI (April, 1969), 1-2, 24.
105. *Directory of Institutions for the Mentally Retarded in India* Chandigarh: The Children's Club, Government Institute of Special Education, 1968.
106. *Directory of Professional Social Workers in India 1967*. Bombay: Indian Conference of Social Work, Central Office, 1967.
107. Dixit, A. K. "The pediatrician's role in the rehabilitation team," *The Journal of Rehabilitation in Asia*, IX (April, 1968), 51-53.
108. Duffy, John K. "The hearing defective child in India," *The Journal of Rehabilitation in Asia*, II (January, 1961), 3-4, 37.
109. Duggal, S. S. "Rehabilitation of the blind," *Social Welfare*, XIII (March, 1967), 4-6.

110. Duraiswami, P. K. "Prevention of orthopaedic handicaps." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 110-114.
111. Duraiswami, P. K. "The problem of rehabilitation of the physically handicapped in India through the ages." In: All-India Institute of Medical Sciences. *Conference on Rehabilitation August 1965*. Delhi: Asia Press, 1965, pp. 13-15.
112. Emerick, Charles W. "Nasal care in leprosy: a means by which to help prevent deformity," *The Journal of Rehabilitation in Asia*, X (April, 1969), 36-37.
113. "Eye camps in rural India," *Rehabilitation Record*, IX (September-October, 1968), 28.
114. "Facing the handicap from nursery age: school for deaf-mutes, Ahmedabad," *Social Welfare*, XV (January, 1969), 22-23.
115. Fazalbhoy, Rehmurt. "Educating blind children at regular day schools." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 35-40.
116. Fazalbhoy, Rehmurt. "Facilities for the education and training of the blind in India," *The Journal of Rehabilitation in Asia*, II (January, 1961), 31-37.
117. Fazalbhoy, Rehmurt. "Integrated education encouraged," *Blind Welfare*, IV (January, 1962), 37-39.
118. Fazalbhoy, Rehmurt. "A survey of educational and training facilities." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 124-131.
119. The Fellowship of the Physically Handicapped. *Annual Reports. 1st April 1963-31st March 1964*. Bombay: Fellowship of the Physically Handicapped, 1964.
120. Fellowship of the Physically Handicapped, Bombay. "Partners in rehabilitation," *Social Welfare*, XIII (March, 1967), 16-17.
121. "The 'fight' after battle," *Social Welfare*, XV (November, 1968), 15.
122. *First All India Conference on Mental Retardation*. New Delhi: Indraprastha Press, 1966.
123. *First All India Conference on Mental Retardation, 26th and 27th November 1966*. New Delhi: Delhi Society for the Welfare of Mentally Retarded Children, 1966. Printed leaflet announcing conference.

124. *First All India Conference on Mental Retardation 26th and 27th November 1966.* New Delhi: Indraprastha Press, 1966.
125. *First All-India Convention of Instructors of the Blind.* New Delhi: National Association of the Instructors for the Blind, 1966.
126. *First All-India Convention of Instructors of the Blind organised by National Association of Instructors of the Blind.* New Delhi: Roma Press, 1966.
127. *The First Mental Measurement Handbook for India.* New Delhi: National Council of Educational Research and Training, 1966.
128. *First National Seminar: Training and Employment of the Physically Handicapped.* Bangalore: Hosali Press, 1961.
129. *First National Seminar on the Training and Employment of the Physically Handicapped.* Delhi: Ministry of Education, Government of India, 1962.
130. "The First National Seminar on the Training and Employment of the Physically Handicapped, Bangalore, India—16-22 December 1961," *The Journal of Rehabilitation in Asia*, IV (January, 1963), 23-26.
131. "The First National Seminar on the Training and Employment of the Physically Handicapped, Bangalore, India—16-22 December 1961," *The Journal of Rehabilitation in Asia*, IV (April, 1963), 27-29.
132. *First Report of the Working of the Physically Handicapped Wing of the Directorate of Social Welfare, Maharashtra State, Poona, for the period 1961-66.* Carbon copy of typed manuscript.
133. Fischer, John. "Western intellectuals vs. Myrdal's brutal facts," *Harper's Magazine*, CXXXVI (June, 1968), 12.
134. *Five Essays on Beggars' Problem.* Bombay: The Beggars Act Advisory Committee, Government of Bombay, Kesari Press, no date.
135. Friese, Afzal. *Home Training for the Mentally Retarded*, Pamphlet No. 5. New Delhi: Federation for the Welfare of the Mentally Retarded, 1966.
136. Gadkari, N. L. "Factory legislation and the blind," *Blind Welfare*, VIII (April, 1966), 10-12.
137. "Gandhi Memorial Leprosy Foundation's Training Course in health education," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 29.

138. Garnier, Derick. "Khooki's first glass," *Social Welfare*, XV (May, 1968), 10-11.
139. Garnier, Derick. "The parched lands and the starving souls," *Social Welfare*, V (April, 1967), 10-11.
140. Gaukroger, B. "Co-ordination of work for blind in India." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 82-85.
141. George, K. I. "Facilities available for rehabilitation in Kerala State." In: All-India Institute of Medical Sciences. *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, pp. 63-64.
142. Ghufuran, Bilquis. "Minimum standards, licensing and counseling in social welfare," *Social Welfare*, XVI (May, 1969), 4-5, 26.
143. Glaser, William A. *Sheltered Employment of the Disabled: an International Survey*. Stockholm: Swedish Labour Market Board, 1966.
144. Gleave, J. A. E. "Training of orthopedic and prosthetic appliance technicians in emerging countries." In: International Society for Rehabilitation of the Disabled. *Proceedings of the Tenth World Congress. Industrial Society and Rehabilitation: Problems and Solutions*. Heidelberg: Deutsche Vereinigung für die Rehabilitation Behindeter e.V., 1967, pp. 261-262.
145. Gokhale, S. D. "Programmes for the mentally retarded," *Social Welfare*, XIV (March, 1968), 6-7, 19.
146. Gokhale, S. D. *Step Ahead in Rehabilitation of Beggars*. Poona: Kesari Press, 1959.
147. Government of India. *Prospectus: Department of Social Welfare Model School for Blind Children*. Nasik, Government of India Press, 1966.
148. Government of India, Department of Social Security. *School for Mentally Deficient Children, Kasturba Niketan, Lajpat Nagar, New Delhi*. Mimeographed pamphlet, no date
149. Government of India, Ministry of Education. *Scheme of Assistance to Voluntary Organizations for the Handicapped*. Delhi: Government Press, 1961.
150. Government of India, Ministry of Education. *Report of the Education Commission 1964-66. Education and National Development*. New Delhi: Government of India Press, 1966.
151. Government of India, Department of Social Welfare. *Annexure I. Government of India Scholarship for Physically Handicapped—Eligibility Requirements*. Mimeographed pamphlet, no date.

152. *Government of India Scholarship for Physically Handicapped—Eligibility Requirements*. New Delhi: Government of India Department of Social Welfare, 1968. Mimeographed pamphlet.
153. Govt. Lady Noyce School for the Deaf & Dumb, New Delhi. *Prospectus*. Brochure, no date.
154. Grewal, Karam Singh. "Status of rehabilitation & post-graduate teaching in Punjab." In: All-India Institute of Medical Sciences, *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, 1965, pp. 34-35.
155. "Guidance and counselling," *The Journal of Rehabilitation in Asia*. XIV (April, 1963), 21-22.
156. Gupta, A. K. "Progress of rehabilitation facilities and post-graduate orthopedic training in Uttar Pradesh." In: All-India Institute of Medical Sciences. *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, 1965, pp. 43-44.
157. Gupta, B. L. "Trends in social welfare," *Social Welfare*, XIV (August, 1967), 1-3.
158. Gupta, J. P. "A blueprint for welfare in prisons," *Social Welfare*, XV (November, 1968), 13-14, 27.
159. Gupta, J. P. "Emotional development of children in institutions: the role of cottage parents," *Social Welfare*, XV (April, 1968), 9-11.
160. Gupta, J. P. "Provisions for mentally retarded children." In: *The Mentally Retarded in India. Report of the First All-India Conference on the Mentally Retarded*. New Delhi: Federation for the Welfare of the Mentally Retarded, 1967, pp. 144-148.
161. Gupta, Rajni. "A general survey of the occupational therapy programme in the New Delhi School," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 34-36.
162. Gupta, S. C. Sen. "Education of the physically handicapped and their rehabilitation in India with special reference to the deaf." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 29-33.
163. Gupta, Sujata. "Plans, progress and prospects of occupational therapy department in the Willingdon Hospital, New Delhi," *The Journal of Rehabilitation in Asia*, IX (July, 1968), 41-43.
164. Guptabhaya, Subir Chandra. "Deaf marriage," *Social Welfare*, XV (February, 1969), 15.

165. "Half of our girls are still out of school," *Social Welfare*, XIV (April, 1967), 9.
166. *Hand Book for Workers in Tuberculosis*. Bombay: Maharashtra State Anti T.B. Association, 1968.
167. *The Handicapped in Greater Delhi*. Delhi: Delhi School of Social Work, 1957. Mimeographed pamphlet.
168. Hasselblad, Oliver W. "Has the leprosy problem been solved?" *The Journal of Rehabilitation in Asia*, VII (January, 1966), 48-49.
- 168a. Hasselblad, O. W. *Rehabilitation of the Leprosy Patient*. New York: American Leprosy Missions, no date.
- 168b. Hasselblad, O. W. *The Role of Public Education in Leprosy Rehabilitation*. New York: American Leprosy Missions, no date.
- 168c. Hasselblad, O. W. *The Vocational Aspects of Rehabilitation*. New York: American Leprosy Missions, no date.
169. Hegarty, Inez E. "Speech and hearing services in India," *Rehabilitation Record*, IX (September-October, 1968), 23-26.
170. *The History of Leprosy*. Austin: Texas State Department of Health. No date.
171. "Inauguration of 'Mook Preeti'—a sales centre of the deaf," *Mook-Dhwani*, II (August-September, 1969), 43-45.
172. *Index of Institutions for the Handicapped in India & Reference Material*. Bombay: Indian Conference of Social Work, Publications Division. Pamphlet, no date.
173. "India: another kind of hunger," *Time*, October 27, 1967, p. 39.
- 173a. "India may revise law on abortion," *The New York Times*, November 23, 1969, p. 9.
174. "Indian news briefs: Bombay," *FERO Newsletter*, II (December, 1967), 2.
175. "Indian Society for the Rehabilitation of the Handicapped," *The Journal of Rehabilitation in Asia*, X (January, 1969), 18.
176. Indian Society for the Rehabilitation of the Handicapped. *Constitution and Rules & Regulations*. Bombay: Indian Society for the Rehabilitation of the Handicapped, no date.
177. Indian Society for the Rehabilitation of the Handicapped. "World Day of the Disabled, March 17, 1968," *The Journal of Rehabilitation in Asia*, IX (July, 1968), 7-20.
178. *The Industrial Home for Blind Women, Bombay*. Bombay: Blind Relief Association, no date.

179. "Industry and the handicapped," *The Journal of Rehabilitation in Asia*, IX (January, 1968), 29-31.
180. "Integrated education in Ludhiana," *Blind Welfare*, VI (December, 1964), 20.
181. "International leprosy symposium held in U.S.A.," *International Rehabilitation Review*, XX (4th Quarter, 1969), 19.
- 181a. International Society for Rehabilitation of the Disabled. *Committee on Leprosy Rehabilitation 1960-63*. Mimeographed sheet, no date.
182. International Society for Rehabilitation of the Disabled. *Practical Implementation of Rehabilitation. Proceedings of the Third Pan-Pacific Rehabilitation Conference, Tokyo, Japan, April 1965*. Tokyo: Japanese Society for Rehabilitation of the Disabled, 1965.
183. International Society for Rehabilitation of the Disabled. *4th Pan Pacific Rehabilitation Conference. Rehabilitation: New Talent for the Community. Hong Kong Sept. 1st-7th 1968. Proceedings*. Hong Kong: Hong Kong Joint Council for the Physically and Mentally Disabled, 1969.
184. International Society for Rehabilitation of the Disabled. *Proceedings of the Tenth World Congress. Industrial Society and Rehabilitation: Problems and Solutions*. Heidelberg: Deutsche Vereinigung fur die Rehabilitation Behindeter e.V., 1967.
185. Interviews with Mr. Lal Advani in Delhi in April 1967 and in Hong Kong in September 1968.
186. Interviews with Mrs. Satyavaty V. Char in Delhi in April 1967.
187. Interviews and correspondence with Mrs. Kamala V. Nimbkar during the period from 1967 to 1969.
188. *Introducing the Workshop for the Blind*. Bombay: The National Association for the Blind, no date.
189. Iswari Prasad Dattatreya Orthopaedic Centre. *Extracts from the Visitors' Book*. Vedaranian (S. India), 1967.
190. Itoh, Masayashi. *Rehabilitation of Patients with Leprosy*. New York: Department of Physical Medicine and Rehabilitation, New York University Medical Center, 1960.
191. Iyer, K. V. "The increasing role of women in economic and social development," *Social Welfare*, XIV (October, 1967), 4-7.
192. Iyer, K. V. "Legislative measures for protection of children," *Social Welfare*, XV (June, 1968), 13-14, 22.

193. Iyer, K. V. "Role of children in the Indian economy," *Social Welfare*, XV (May, 1968), 1-3.
194. Jagadisan, T. N. *Mahatma Gandhi Answers the Challenge of Leprosy*. Madras: Diocesan Press, 1965.
195. Jagadisan, T. N. "Physical and emotional problems in restoration of leprosy patients." In: International Society for Rehabilitation of the Disabled. *Practical Implementation of Rehabilitation. Proceedings of the Third Pan-Pacific Conference, Tokyo, Japan, April 1965*. Tokyo: Japanese Society for Rehabilitation of the Disabled, 1965, pp. 189-194.
196. Jaiswal, V. R. "Report on development, plans and progress of the occupational therapy department, Government Home for Crippled Children, Nagpur," *The Journal of Rehabilitation in Asia*, IX (July, 1968), 43-45.
197. Jawaharlal Nehru Institute of Physical Medicine and Rehabilitation. *1965 Foundation Stone Laid by Mr. Lal Bahadur Shastri, the Prime Minister of India, on 13th April, 1965*. New Delhi: JNIPMR, 1965.
198. Johns, S. A. "Leprosy patients who raise two crops a year," *Social Welfare*, XVI (April, 1969), 4-5.
199. Jonathan, D. Edward. "Extra-curricular activities in school for the blind." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 24-31.
200. Jussawala, K. N. K. "All India Educational & Vocational Guidance Association annual conference Hyderabad," *Blind Welfare*, II (December, 1960), 19-23.
201. Jussawala, K. N. K. *Child Welfare Services for the Blind in the State of Maharashtra*. Mimeographed paper, January 18, 1967.
202. Jussawala, K. N. K. "The educational problem of the blind," *Blind Welfare*, III (August, 1961), 4-11.
203. Jussawala, K. N. K. "Employment of the blind as home workers," *Blind Welfare*, V (December, 1963), 16-20.
204. Jussawala, K. N. K. "The need for agricultural and rural training of the blind in India." In: *The Second All India Conference for the Blind*, Bombay: The National Association for the Blind, 1959, pp. 98-103.
205. Jussawala, K. N. K. "Standardization of curriculum in schools for the blind." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 14-19.

206. Kala, S. C. "Family planning in U.P.: a dismal story," *Times of India*, Bombay, December 20, 1968.
207. Kale, Suprabhat. "N.S.D. Industrial Home for the Blind," *Social Welfare*, XIV (July, 1967), 15-17, 24.
208. Kaoosji, Sheharyar. "A historical survey of services for the blind." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 25-31.
209. Kaoosji, Sheharyar. "Preparation and placement of the deaf in normal employment," *Social Welfare*, XIII (March, 1967), 7.
210. Kaoosji, Sheharyar. "A survey of educational and training facilities." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 32-38.
211. Kapila, P. N. "The handicapped and their vocational rehabilitation." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 63-64.
212. Kapur, Y. P. "Recent development in the speech and hearing field in India," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 23-25.
213. Kapur, Y. P. "Recent developments in India." In: International Society for Rehabilitation of the Disabled. *4th Pan Pacific Rehabilitation Conference. Rehabilitation: New Talent for the Community*. Hong Kong: Hong Kong Joint Council for the Physically and Mentally Handicapped, 1969, pp. 391-394.
214. Khan, Evelyn. "A historical survey of services for the deaf." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 63-71.
215. Khan, Sahibsada Abdul Munim. "The child at work and play," *Social Welfare*, XV (May, 1968), 9.
216. King, Edmund J. *Other schools and Ours*. New York: Rinehart & Company, 1958.
217. Kochavara, T. L. et al. *Management of Residential Institutions for Dependent and Neglected Children*. Mimeographed paper, 1967.
218. Koestler, Arthur. "The Yogi and the Commissar," *The New York Times Magazine*, October 5, 1969, 27 ff.
219. Kowli, S. B. "Canvassing for the disabled," *Occupational Therapy and Rehabilitation in Asia*, I (August, 1960), 34-36.

220. Kowli, S. B. "The pilot scheme for placement of physically handicapped, Bombay," *Occupational Therapy and Rehabilitation in Asia*, I (February, 1960), 50-52.
221. Kowli, S. B. "Placement and rehabilitation." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 93-101.
222. Krishna, Gopal. "Women and their leisure," *Social Welfare*, XV (April, 1968), 13-15.
223. Kulkarni, Akka. *Child welfare Legislation and its Implementation in Maharashtra*. Mimeographed paper, 1967.
- 223a. Kulkarni, D. V. Comments during group discussions at Seminar on "Combating Stigma Resulting from Deformity and Disease" sponsored by the Leonard Wood Memorial, New York City, Nov. 6, 1969.
224. Kulkarni, D. V. "Rehabilitation of leprosy patients," *The Journal of Rehabilitation in Asia*, VI (April, 1965), 31-36.
225. Kulkarni, M. R. "Current thinking in modifying or upgrading undergraduate training programmes," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 31-34.
226. Kulkarni, M. R. "Development of psychiatric occupational therapy programmes in India," *The Journal of Rehabilitation in Asia*, IX (July, 1968), 35-37.
227. Kulkarni, V. M. "Mental retardation: a general review." In: *Mental Retardation in India. Report of the First All-India Conference on Mental Retardation*. New Delhi: Federation for the Welfare of the Mentally Retarded, 1967, pp. 42-47.
228. Kundu, C. L. "Tribal delinquency," *Social Welfare*, XV (February, 1969), 4, 6.
229. Kuppaswamy, B. "A survey of mental retardation among children enrolled in middle schools of Mysore City," *Indian Journal of Mental Retardation*, I (January, 1968), pp. 12-19.
230. Lakshmana, Chintamani. "Abolition of untouchability in Andhra Pradesh." *Social Welfare*, XV (May, 1968), 22-24.
231. Lakshmana, Chintamani, and Lakshmana, Mamata. "Youth welfare programmes," *Social Welfare*, XV (March, 1969), 4-5.
232. Lal, Mohan, and Gupta, Uday C. "Prevention of blindness." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 17-24.

233. Lambert, Richard D. "Cycles of public enthusiasm in India since 1957," *Asia*, No. 12 (Summer, 1968), 3-12.
234. LaRocca, Joseph M. "Progress of international research," *Rehabilitation Record*, III (May-June, 1962), 3-6.
235. Lelyveld, Joseph. "India planning a promotional drive in a new attempt to reduce birth rate," *The New York Times*, August 16, 1968.
236. Lelyveld, Joseph. "India seeking birth control hints from the Kama Sutra," *The New York Times*, August 6, 1968.
237. "Leprosy congress held in London," *International Rehabilitation Review*, XX (January, 1969), 19.
238. "Leprosy control programme to be intensified," *Social Welfare*, XVI (July, 1969), 18.
239. "Leprosy news," *The Journal of Rehabilitation in Asia*, IX (July, 1968), 30.
240. "Leprosy news," *The Journal of Rehabilitation in Asia*, X (April, 1969), 38-39.
- 240a. *Leprosy: Our Treatment is Wrong*. New York: Leonard Wood Memorial, 1968.
- 240b. *Leprosy: Problems and Research Programs*. New York: Leonard Wood Memorial, no date.
241. Letter, July 14, 1969, from Mr. Martin E. McCavitt, Chief, Division of International Activities, Social and Rehabilitation Service, Department of Health, Education, and Welfare, U.S. Government.
242. Long, Charles. *Report of Professional Activities on Research and Speaking Trip in India and France, April and May, 1962*. Mimeographed paper, no date.
243. Mackenzie, Clutha. "The blind and agriculture." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 86-92.
244. Malin, A. J. "Adaptation of the Wechsler Intelligence Scale for Indian children," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 19-20.
245. Malin, Arthur John. "Mental retardation in India," *The Journal of Rehabilitation in Asia*, IX (April, 1968), 44-46.
246. Malin, Arthur John. "Psychological tests for retarded Indian children," *The Journal of Rehabilitation in Asia*, IX (January, 1968), 32-33.

247. Mann, R. S. "Social change and the status of tribal women," *Social Welfare*, XIV (February, 1968), pp. 18-19.
248. Marfatia, J. C. *Mental Deficiency*. Pamphlet No. 3. New Delhi: Federation for the Welfare of the Mentally Retarded (India), no date.
249. Marfatia, J. C. "Nature and extent of the problem." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 161-166.
250. Matta, G. T. *Rehabilitation of the Mentally Retarded*. Mimeographed paper, 1967.
251. McCavitt, Martin E. "Conference in Trivandrum, India," *Rehabilitation Record* IX (September-October, 1968), 35-36.
252. McWhinnie, James B. "The role of the occupational therapist in the adolescent in-patient unit," *The Journal of Rehabilitation in Asia*, VIII (April, 1967), 29-30.
253. "Medical education in the Punjab," *Roche Medical Image*, X (October, 1968), 11-13.
254. Mehta, B. S. "Placement of the orthopaedically handicapped." In: All India Institute of Medical Sciences, *Conference on rehabilitation, August 1965*. Delhi: Asia Press, 1965, pp. 28-33.
255. Mehta, I. B. "How to start the vocational rehabilitation of the deaf-mutes: a study," *The Journal of Rehabilitation in Asia*, VII (October, 1966), 33-34.
256. Mehta, I. B. "The problem of deaf children in India," *The Journal of Rehabilitation in Asia*, VIII (April, 1967), 18-19.
257. *Memorandum of Association of the Delhi Society for the Welfare of Retarded Children*. New Delhi: Delhi Society for the Welfare of Retarded Children, 1965.
258. *Memorandum of Association of the Federation for the Welfare of the Mentally Retarded (India)*. Mimeographed pamphlet, no date.
259. *Memorandum of Association of Rashtriya Virjanand Andh Kanya Vidyalaya Society Delhi*: Delhi: Vidyalaya Society, 1951.
260. *Mental Retardation in India. Report of the First All-India Conference on Mental Retardation*. New Delhi: Indraprastha Press, 1967.
261. "The mentally ill in India," *Rehabilitation Record*, X (July-August, 1969), 35.

262. "Message from the Director," *Fero Newsletter*, IV (February, 1969), 4.
263. Millar, D. "Preparation of young adults for vocational training in institutions for the orthopaedically handicapped." In: *Vocational rehabilitation of the handicapped: a report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 58-60.
264. Ministry of Education, Government of India. *Delhi Survey*. Delhi: Government of India Press, 1961.
265. Ministry of Education, Government of India. *Employment for the Physically Handicapped*. New Delhi: Government of India, 1961.
266. Ministry of Education. *Prospectus: Training Centre for the Adult Blind*. New Delhi: Government of India Press, 1961.
267. Ministry of Education. *Scheme of Assistance to Voluntary Organisations for the Handicapped*. Delhi: Government of India, 1961.
268. Ministry of Education, Government of India. *Training Centre for the Adult Deaf; Prospectus*. Delhi: Ministry of Education, 1962.
269. Misra, A. S. "Delinquency: control measures in U.P.," *Social Welfare*, XV (February, 1969), 1-2, 5.
270. Misra, S. K. "Vocational Rehabilitation Training Centre for the Deaf and the need for rehabilitation programmes for the deaf." *The Journal of Rehabilitation in Asia*, VIII (April, 1967), 20-21.
271. Modak, Usha. "Training in social work of the Maharashtra State Women's Council," *The Journal of Rehabilitation in Asia*. XIV (April, 1963), 15-16.
272. Mohan, Brij. "The adult retarded: problems and programmes," *Social Welfare*, XVI (August, 1969), 26-28.
273. Mohan, Brij. "Planning and administration of mental health programmes," *The Journal of Rehabilitation in Asia*. X (January, 1969), 29-34.
274. Mohan, Brij. "Psychiatric administration in India," *Social Welfare*, XV (April, 1968), 18-19.
275. Mohoni, Usha. "Sport for the disabled with special reference to the blind," *The Journal of Rehabilitation in Asia*, II (January, 1961), 38-39.
276. Monros, Juan. *Report of Four-Month Course in Prosthetics and Orthotics at Government General Hospital, Madras, India, August 1967 to November 1967*. Multilithed brochure, no date.

277. Moos, F. F. "India's blind and beggary," *Rehabilitation Record*, IX (September-October, 1968), 40.
278. Mudalgikar, B. G. "Happy hours at 'The Haven,'" *Social Welfare*, XIII (February, 1967), 16-17.
279. Mukopadhaya, B. "Guest editorial," *The Journal of Rehabilitation in Asia*, II (July, 1961), 3.
280. Munim, Indrajit M. "Lions serve the blind," *Blind Welfare*, II (August, 1960), 6-8.
281. Myrdal, Gunnar. *Asian Drama: an Inquiry into the Poverty of Nations*, New York: Pantheon, 1968. Three volumes.
282. Nagaraja, Jaya. "The mentally retarded—a review." In: *Mental Retardation in India. Report of the First All-India Conference on Mental Retardation*. New Delhi: Federation for the Welfare of the Mentally Retarded (India). 1967, pp. 48-51.
283. Naik, Dahyabhai J. "Tribal welfare in Gujarat," *Social Welfare*, XV (January, 1969), 36-38.
284. Nair, G. Ravindran. "Count his ability, not disability; role of Special Employment Exchanges," *Social Welfare*, XIII (March, 1967), 18-19.
285. Nakhooda, Zulie. "Children's sponsorships," *Social Welfare*, XIV (November, 1967), 10-12.
286. Nakhooda, Zulie. "Understanding the handicapped child," *Social Welfare*, XV (July, 1968), 12.
287. Nanavaty, Sharda. "CARE in the service of ill-fed children," *Social Welfare*, XV (March, 1969), 25-26.
288. Nandagopaul, B. A. "Psychological studies of the blind." In: *The Second All India Conference for the Blind, 1959*. Bombay: The National Association for the Blind, 1959, pp. 32-34.
289. Narayanan, P. *Residential Institutions*. Pamphlet No. 6. New Delhi: Federation for the Welfare of the Mentally Retarded (India) 1966.
290. Narayanan, Santosh, "Rehabilitation of the orthopaedically handicapped," *Social Welfare*, XIV (July, 1967), 18-19.
291. Nardekar, G. L. "Placement of the blind in open industry," *Blind Welfare*, IV (January, 1962), 18-20.
292. Nardekar, G. L. "Placement of the blind: 'our philosophy,'" *Blind Welfare*, VIII (April, 1966), 6-9.
293. Nardekar, G. L. "Pre-employment training centre for the blind." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 62-65.

294. Narula, Uma. "Indian women in changing society: their career, cultural values and social pattern," *Social Welfare*, XIV (July, 1967), 8-9.
295. Natarajan, M. "Rehabilitation of the physically handicapped in Madras State." In: All-India Institute of Medical Sciences. *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, 1965, pp. 54-56.
296. *The National Association for the Blind*. Bombay: The National Association for the Blind, 1964.
297. The National Association for the Blind. *Accounts 1964-65*. Bombay: The National Association for the Blind, 1966.
298. The National Association for the Blind. *Memorandum of Association and Rules and Regulations*. Bombay: The National Association for the Blind, 1966.
299. National Association for the Blind. *Rehabilitating the Blind*. Bombay: National Association for the Blind, no date.
301. The National Association for the Blind (India). *Report 1961-62*. Bombay: The National Association for the Blind, 1962.
302. The National Association for the Blind (India). *Report 1962-63*. Bombay: The National Association for the Blind, 1963.
303. The National Association for the Blind. *Report 1963-64*. Bombay: The National Association for the Blind, 1964.
304. The National Association for the Blind. *Report 1964-65*. Bombay: The National Association for the Blind, 1965.
305. The National Association for the Blind, India. *Scheme for Rehabilitation Centre for the Blind*. Bombay: Mimeographed pamphlet, no date.
306. The National Association for the Blind. *Symposium on Employment & Placement March 27, 1965, in Conjunction with the World Day of the Disabled*. Bombay: The National Association for the Blind, 1965.
307. "National Leprosy Organization, India," *The Journal of Rehabilitation in Asia*, X (July, 1969), 30.
308. Nayar, Sushila. "Inaugural address." In: *Vocational Rehabilitation of the Handicapped: Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 7-8.
309. "Neera Dogra: a pioneering social worker from Assam takes over as the Chairman of the Central Board," *Social Welfare*, XVI (May, 1969), 3.
310. "News and events—books" *The Journal of Rehabilitation in Asia*, X (January, 1969), 36-37.

311. "News items: mental retardation," *The Journal of Rehabilitation in Asia*, X (April, 1969), 30.
312. "News and views: Bombay—Audiology and Speech Therapy School," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 46.
313. "News and views: The blind," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 47-48.
314. "News and views: The deaf," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 40-41.
315. News and views: General section," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 49.
316. "News and views: Speech therapy in India," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 45-46.
317. Newton, Charles. "Beggar menace in Calcutta," *Social Welfare*, XV (March, 1969), 19-22.
318. Nimbkar, Kamala V. "Basic paper for the Seminar on Vocational Rehabilitation of the Handicapped and the Use of Normal Facilities." In: *Vocational Rehabilitation of the Handicapped: Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 9-13.
319. Nimbkar, Kamala V. "Brief history and report on the start and development of Indian Society for Rehabilitation of the Handicapped." In: All-India Institute of Medical Sciences. *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, 1965, pp. 89-91.
320. Nimbkar, Kamala V. *The Challenge of Leprosy to Occupational Therapy, or the Place of Occupational Therapy in the Rehabilitation of Leprosy Patients*. Bombay: Adoni Printers, 1962.
321. Nimbkar, Kamala V. "Climate for rehabilitation of leprosy patients," *Social Welfare*, XV (April, 1968), 12.
322. Nimbkar, Kamala V. "Compulsory education and the crippled child," *Occupational Therapy and Rehabilitation in Asia*, I (August, 1960), 3-10.
323. Nimbkar, Kamala V. "Debate." In: International Society for Rehabilitation of the Disabled. *4th Pan Pacific Rehabilitation Conference. Rehabilitation: New Talent for the Community*. Hong Kong: Hong Kong Joint Council for the Physically and Mentally Disabled, 1969, pp. 29-31.
324. Nimbkar, Kamala V. "Indian Society for the Rehabilitation of the Handicapped," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 30.

325. Nimbkar, Kamala V. "Nature and extent of the problem," In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 105-109.
326. Nimbkar, Kamala V. "Occupations for leprosy patients; Part I," *The Journal of Rehabilitation in Asia*, IV (July, 1963), 54-55.
327. Nimbkar, Kamala V. "Physical medicine in leprosy," *The Journal of Rehabilitation in Asia*, VI (July, 1965), 25-29.
328. Nimbkar, Kamala V. "The place of occupational therapy in rehabilitation of leprosy patients," *The Journal of Rehabilitation in Asia*, II (April, 1961), 17-18.
329. Nimbkar, Kamala V. "Placement and rehabilitation." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 150-158.
330. Nimbkar, Kamala V. "Prevention is better than cure," *The Journal of Rehabilitation in Asia*, VIII (October, 1967), 13.
331. Nimbkar, Kamala V. "Problems of rehabilitation in my country—India," *The Journal of Rehabilitation in Asia*, XIV (April, 1963), 17-18.
332. Nimbkar, Kamala V. "Vocational rehabilitation of the handicapped," *Social Welfare*, XIII (March, 1967), 2-3, 22.
333. Nimbkar, Kamala V. and Hajarnavis, D. S. *Progress of Child Welfare Services in Maharashtra for the Physically Handicapped Children (Orthopaedic)*. Mimeographed paper, 1967.
334. Nimbkar, Kamala V. and Mehta, Page. "Occupational and physical therapy." In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 139-143.
335. Nimbkar, Kamala V. and Mehta, Page. "Professional education of occupational therapists and physiotherapists in India," *Current Medical Practice*, III (September, 1959), 479-484.
336. *Occupational Therapy Institute*. New Delhi: National Printing Press, no date.
337. Oza, Ramesh K. "Audiological services in India," -In: International Society for Rehabilitation of the Disabled. *4th Pan Pacific Rehabilitation Conference. Rehabilitation: New Talent for the Community*. Hong Kong: Hong Kong Central Council for the Physically and Mentally Handicapped, 1969, pp. 396-397.
338. Pai, G. B. "Suggestions for legislation on mentally retarded." In: *Mental Retardation in India. Report of the First All-India Conference on Mental Retardation*. New Delhi: Federation for the Welfare of the Mentally Retarded, 1967, pp. 139-144.

339. Pamra, S. P. "Control of tuberculosis: role of voluntary organisations," *Social Welfare*, XIV (August, 1967), 6-7, 28.
340. Pandey, R. E. "Psychology in India," *The American Psychologist*, XXIV (October, 1969), 936-939.
341. Patanjali. V. "Women's role in social change," *Social Welfare*, XVI (April, 1969), 14, 30.
342. Patel, V. R. "Correctional programmes in the jails in Gujarat," *Social Welfare*, XV (January, 1969), 46-47, 51.
343. Pavri, H. D. "Training of leprosy patients for work in industry." In: International Society for Rehabilitation of the Disabled. *4th Pan Pacific Rehabilitation Conference. Rehabilitation: New Talent for the Community*. Hong Kong: Hong Kong Joint Council for the Physically and Mentally Disabled, 1969, pp. 218-219.
344. Pavri, H. K. "A 'burns' case study," *Occupational Therapy and Rehabilitation in Asia*, I (May, 1960), 24-29.
345. *Physically Handicapped Persons in Maharashtra (1960-61)*. Poona: Director of Social Welfare, Maharashtra State, Poona, July 1964. Mimeographed pamphlet.
346. Pitts, Joanna. "Rehabilitation project at Purulia leprosy home and hospital," *The Journal of Rehabilitation in Asia*, VI (October, 1965), 45-48.
347. Pohekar, G. S. *Child Welfare Services for the Deaf in the State of Maharashtra*. Mimeographed paper, 1967.
348. Pohekar, G. S. "Vocational rehabilitation of the deaf and the use of normal facilities." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 34-36.
349. "Poliomyelitis on the increase in warm climates," *International Rehabilitation Review*, XX (January, 1969), 5-6.
350. "Poona School and Home for the Blind," *Social Welfare*, XV (July, 1968), 16-17.
351. Potnis, S. R. "Employment opportunities for blind women." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 66-69.
352. Prabhu, G. G. "The participation of the parents in the services for the retarded," *Indian Journal of Mental Retardation*, I (January, 1968), 4-11.
353. Prabhu, G. G. "Speech problems of the mentally retarded," *Indian Journal of Mental Retardation*, I (July, 1968), 87-94.

354. Prabhu, M. and Prabhu, G. G. "Occupational therapy with the mentally retarded," *The Journal of Rehabilitation in Asia*, X (April, 1969), 21-29.
355. Prabhu, M. and Prabhu, G. G. "Psychiatric occupational therapy," *The Journal of Rehabilitation in Asia*, IX (January, 1968), 19-24.
356. Prakash, Ram. "Unprogressive pattern of women's employment in India," *Social Welfare*, XVI (July, 1969), 9-10, 19.
357. Prasad, Lakshman. "Employment prospects for the blind in open industry," *Blind Welfare*, II (December, 1960), 6-9.
358. Prasad, Lakshman. "Vocational rehabilitation of the blind in India," *The Journal of Rehabilitation in Asia*, II (July, 1961), 36-37.
359. Prasad, S. "...and turns young boys into delinquents: a survey of delinquent boys in Lucknow," *Social Welfare*, XV (May, 1968), 6.
360. *Proceedings of the Panel on International Rehabilitation. The President's Committee on Employment of the Handicapped, May 2, 1968.* Washington, D.C.: U.S. Government Printing Office, 1968.
361. *Prospectus of Jawaharlal Nehru Institute of Physical Medicine and Rehabilitation.* New Delhi, JNIPMR, 1965.
362. Raghavulu, C. V. "Administration of welfare programmes of scheduled castes," *Social Welfare*, XIV (August, 1967), 4-5, 28.
363. Rajalakshmi, R. "The psychological status of underprivileged children reared at home and in an orphanage in South India," *Indian Journal of Mental Retardation*, I (July, 1968), 53-61.
364. Rajwadkar, C. H. "Mobility of the deaf," *Fellowship*, VIII (June, 1967), 15-16.
365. Ramadwar, D. K. et al. *Prevalence and Patterns of Handicaps at Kelod (Health Unit, Saoner).* Nagpur: Medical College, 1960.
366. Ramanujam, B. K. "Pediatrics, child development and mental retardation," *Indian Journal of Mental Retardation*, I (January, 1968), 38-47.
367. "Rani Chandramani Devi Children's Hospital. Rehabilitation centre for handicapped children, Visakhapatnam, Andhra Pradesh, India," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 11.
368. Ray, S. Dutta. "Some observations on the rehabilitation of the mentally handicapped in India," *The Journal of Rehabilitation in Asia*, II (July, 1961), 28-29.

369. Raza-ul-Jabbar, M. "Mobility of the orthopaedically handicapped," *Fellowship*, VIII (June, 1967), 12-14.
370. *Rehabilitation of Disabled in Maharashtra State*. Bombay: Directorate of Social Welfare, Maharashtra State, Poona, 1967.
371. *Rehabilitation of Leprosy-Affected Persons as an Emerging Concept; a Report on Rehabilitation of Leprosy-Affected Persons, Regional Seminar, South East Asia and Western Europe, Wardha*, Bombay: International Council on Social Welfare, 1968.
372. "Repairing the ravages of Leprosy," *Roche Medical Image*, X (June 1968).
373. *Report of the Cerebral Palsy Seminar, Non-Medical, Held Hong Kong 30th August-1st September 1968*. Perth: The Australian Cerebral Palsy Association Incorporated, 1969.
374. *Report of the Evaluation Committee on Industrial, Occupational and Agricultural Programmes in the Beggars Homes in Maharashtra State 1963-64*. Nagpur: Government Press, 1966.
375. *Report of the Executive Council of the National Association for the Blind (India) 1956-58*. Bombay: The National Association for the Blind, 1958.
376. *Report of the National Association for the Blind (India) 1958-59*. Bombay: The National Association for the Blind, 1959.
377. *Report of the National Association for the Blind (India) 1959-60*. Bombay: The National Association for the Blind, 1960.
378. "Report on the survey made at Fugewadi of leprosy-affected persons for the committee appointed by Government of Maharashtra, with the assistance of Gandhi Memorial Leprosy Foundation, Wardha and Karve Institute of Social Service, Poona," *The Journal of Rehabilitation in Asia*, VIII (October, 1967), 7-12.
379. Robinson, David W. "India tackles its leprosy problems," *Rehabilitation Record*, III (May-June, 1962), 7-10.
380. Royappa, Joseph P. "Employment of the blind in open industry." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 70-75.
381. *Rules and Regulations of the Federation for the Welfare of the Mentally Retarded (India)*. Mimeographed pamphlet, no date.
382. *Rural Institute for the Blind*. Bombay: Indian Guild for the Handicapped, no date.
383. "Rural training for the blind in India," *The Times Educational Supplement*, March 30, 1962, p. 620.

384. Rusk, Howard A. "New view on leprosy," *The New York Times*, January 30, 1966.
385. Rusk, Howard A. "The story of leprosy," *The New York Times*, January 26, 1964.
386. Rusk, Howard A. "World leprosy day," *The New York Times*, February 16, 1969.
387. Sabnis, M. S. *Rehabilitative Services for Delinquent Children in Maharashtra*. Mimeographed paper, 1967.
388. "The saga of social work: Anandvan, Bombay," *Social Welfare*, XIII (March, 1967), 20-21.
389. Sahasrabuddhe, M. N. "Battle casualties and their rehabilitation potential," *The Journal of Rehabilitation in Asia*, IX (October, 1968), 40-44.
390. Saksena, R. N. *Report on a Random Sample Survey of the Handicapped in Kanpur*. Mimeographed pamphlet, no date.
391. Sant, M. V. "Rehabilitation for the disabled in India," *Rehabilitation*, No. 67 (October-December, 1968), 51-54.
392. Sant, M. V. "Rehabilitation of the orthopaedically handicapped in Maharashtra." In: All-India Institute of Medical Sciences. *Conference on Rehabilitation, August 1965*. Delhi: Asia Press, 1965, pp. 60-62.
393. Sant, M. V. and Matta, G. T. "Preparation and employment of the orthopaedically handicapped." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 56-57.
394. Sargent, Sir John. *Society, Schools and Progress in India*. New York: Pergamon Press, 1968.
395. *Scheme for the Workshop for the Blind, Worli*. Mimeographed pamphlet, no date.
396. *School for Children in Need of Special Care. 1965-1966*. Bombay: Society for the Care, Treatment and Training of Children in Need of Special Care, 1966.
397. Scrimshaw, Nevin S. "Infant malnutrition and adult learning," *Saturday Review*, March 16, 1968, pp. 64-66, 84.
398. *S.E.C. Day School (for Crippled Children)*. Bombay: Society for the Education of the Crippled (Child & Adult), no date.
399. *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959.

400. *Second All India Conference for the Blind. Resolutions, General & Professional, June 18-21, 1959.* Bombay: The National Association for the Blind, 1959. Also in: *Blind Welfare*, I (December, 1959), 3-11.
401. "Second Asian conference on work for the blind, Kuala Lumpur May 20-30, 1963," *Blind Welfare*, V. (August, 1963), 3-9.
402. Selvapandian, Ambrose J. "Problems of rehabilitation of leprosy patients," In: International Society for Rehabilitation of the Disabled. *Practical Implementation of Rehabilitation. Proceedings of the Third Pan-Pacific Rehabilitation Conference, Tokyo, Japan, April 1965.* Tokyo: Japanese Society for Rehabilitation of the Disabled, 1965, pp. 209-211.
403. Selvapandian, A. J. "Problems of rehabilitation of leprosy patients in India." In: International Society for Rehabilitation of the Disabled. *Proceedings of the Tenth World Congress. Industrial Society and Rehabilitation: Problems and Solutions.* Heidelberg: Deutsche Vereinigung fur die Rehabilitation Behindeter e.V., 1967, pp. 110-115.
404. Selvapandian, A. J. "Rehabilitation in leprosy; a study of its problems and possibilities," *The Journal of Rehabilitation in Asia*, II (July, 1961), 24-27.
405. Selvapandian, A. J. and Radhakrishnan, S. R. "Socio-economic evaluation of leprosy patients with plantar ulcer." In: International Society for Rehabilitation of the Disabled. *4th Pan Pacific Rehabilitation Conference. Rehabilitation: New Talent for the Community.* Hong Kong: Hong Kong Joint Council for the Physically and Mentally Disabled, 1969, pp. 239-241.
406. *Seminar on Vocational Rehabilitation and the Use of Normal Facilities for the Handicapped.* Bombay: Times of India Press, 1966.
407. Sen, A. C. "Aural health survey of the students of Govt. Lady Noyce School for the Deaf and Dumb, New Delhi," *Occupational Therapy and Rehabilitation in Asia*, I (February, 1960), 26-35.
408. Sen, P. K. "Education of the blind," *Social Welfare*, XV (April, 1968), 16-17.
409. Sethi, D. P. "Social work curricula in India," *Social Welfare*, XV (April, 1968), 6-8, 15.
410. Shah, Madhuri R. *Primary education and medical care in municipal schools in greater Bombay.* Mimeographed paper, 1967.
411. Shah, P. M. *Child Care and Nutrition.* Mimeographed paper, 1967.

412. Shah, Shantilal H. *The Importance of Resettlement in Rural Areas and the Use of Community Resources.* (Paper presented at Second Asian Conference on World for the Blind, Kuala Lumpur, May 1963.) Bombay: Commercial Printing Press Limited, 1963. Also in *Blind Welfare* V, (August, 1963), 22-26.
413. Shah, Shantilal. "Social work in Gujarat," *Social Welfare*, XV (March, 1969), 1-3.
414. Sharma, K. C. "Population of disabled on the increase: disabilities and their new trends," *The Journal of Rehabilitation in Asia*, X (April, 1969), 13-18.
415. Sharma, P. N. "A study of behaviour disorders in children," *Social Welfare*, XIV (January, 1968), 13-14, 28.
416. Sharma, Vinod. "School for the blind, Patna," *Social Welfare*, XV (October, 1968), 16-17.
417. Sharma, V. P. "Notes on the psychologic appraisal of speech disorders and the Indian students," *The Journal of Rehabilitation in Asia* X (January, 1969), 26-28.
418. Shervaiakar, R. V. "Rehabilitation of the mentally ill," *The Journal of Rehabilitation in Asia*, V (January, 1964), 31-35.
419. Shewak, Dada. "Social group work in hospitals for children," *Social Welfare*, XVI (July, 1969), 22-23, 26.
420. Shrivastawa, A. N. "Vocational rehabilitation for the orthopaedically handicapped." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona.* Bombay: States' People Press, 1966, pp. 61-62.
421. Shroff, Roshan B. "The problems of the blind in industrial employment," *Blind Welfare*, VIII (April, 1966), 15-17.
422. Shukla, K. S. "The blind: his family and environment, *Social Welfare*, XIV (October, 1967), 22-24.
423. Sinclair, Seeta. *Etiology of Mental Retardation.* Pamphlet No. 5. New Delhi: Federation for the Welfare of the Mentally Retarded (India), 1966.
424. Singh, Inder Jeet. "Juvenile subculture in Varanasi," *Social Welfare*, XVI (June, 1969), 4-5, 28.
425. Singh, T. G. N. "A blind army officer looks ahead," *Social Welfare*, XV (November, 1968), 27.
426. The Society for the Care, Treatment and Training of Children in Need of Special Care. *Teachers' Training Course; Prospectus.* Bombay: Society for the Care, Treatment and Training of Children in Need of Special Care, 1965.

427. Somaya, B. M. "Rehabilitation in burns," *The Journal of Rehabilitation in Asia*, VIII (July, 1967), 19-21.
428. Srinivasan, H. and Noordeen, S. K. "Rehabilitation in leprosy; a study of the nature and extent of the problem in a rural area," *The Journal of Rehabilitation in Asia*, VIII (January, 1967), 9-14.
429. Srivastava, S. P. "The physically handicapped beggar in an Indian city," *The Journal of Rehabilitation in Asia*, IX (January, 1968), 9-10.
430. "State Aftercare Home, Dahoda," *Social Welfare*, XV (March, 1969), 33.
431. "States roundup: family and child welfare scheme inaugurated in many states," *Social Welfare*, XIV (January, 1968), 6-9.
432. *Summary of Information on Projects and Activities of the World Rehabilitation Fund, Inc. (January 1, 1966 to December 31, 1966)*. New York: World Rehabilitation Fund, 1967.
433. *Summary of Information on Projects and Activities of the World Rehabilitation Fund, Inc., January 1, 1967 to December 31, 1967*. New York: World Rehabilitation Fund, 1968.
434. Sundaran, Kamakshi. "The Indian volunteer," *Social Welfare*, XIV (June, 1967), 4, 7.
435. "Surat Branch, All India Women's Conference. Health survey of children," *The Journal of Rehabilitation in Asia*, VII (January, 1966), 17-18.
436. Surty, Tehmi. "Need for a balanced approach to leprosy control," *The Journal of Rehabilitation in Asia*, VIII (July, 1967), 41.
437. Swamy, N. V. R. "Care of the mentally retarded," *Social Welfare*, XV (September, 1968), 14.
438. Swamy, N. V. R. "Training the blind in tools," *Social Welfare*, XV (May, 1968), 16-18.
439. "Symposium on the employment of the blind," *Blind Welfare*, VII (April, 1965), 23-24. Complete report in *Blind Welfare*, VIII (April, 1966).
440. *The Tata Agricultural and Rural Training Centre for the Blind*. Bombay: Commercial Printing Press, 1966.
441. Taylor, Wallace W. and Taylor, Isabelle Wagner. *Services for Handicapped Youth in England and Wales*. New York: International Society for Rehabilitation of the Disabled, 1967.
442. Taylor, Wallace W. and Taylor, Isabelle Wagner. *Special Education of Physically Handicapped Children in Western Europe*. New York: International Society for the Welfare of Cripples, 1960.

443. Thapar, Ashok. "The changing village," *Times of India*, Bombay, November 27, 1968.
444. Training centre and sub-contract workshop for the blind, New Delhi," *Social Welfare*, XIV (April, 1967), 8.
445. Tribhuwan, Jyotsna. *Law Relating to Women in India*. Poona: P. R. Ambike, 1965.
446. Tripathi, Kalawati. "Access of girls to education," *Social Welfare*, XIV (March, 1968), 8-9.
447. UNESCO, *International Directories of Education: Special Education*. Paris: UNESCO, 1968.
- 447a. United Nations Bureau of Social Affairs. *Proceedings of the 1964 Ad Hoc Meeting, Geneva, Switzerland*. Geneva: UNESCO, 1964.
448. United Nations Department of Social and Economic Affairs. *Study on Legislative and Administrative Aspects of Rehabilitation of the Disabled in Selected Countries*. New York: United Nations, 1964.
449. United Nations Department of Economic and Social Affairs. *Summary of Information on Projects and Activities in the Field of Rehabilitation of the Disabled during 1966*. New York: United Nations Department of Economic and Social Affairs, 1967.
450. United Nations Department of Economic and Social Affairs. *Summary of Information on Projects and Activities in the Field of Rehabilitation of the Disabled during 1967*. New York: United Nations Department of Economic and Social Affairs, 1968.
451. United States Government Department of Health, Education, and Welfare; Office of Vocational Rehabilitation. *Memorandum of Understanding*. Washington: Mimeographed pamphlet, May 1, 1963.
452. Vaidyanathan, E. P. "Training of paramedical workers and their use in the leprosy programme." In: International Society for Rehabilitation of the Disabled. *4th Pan Pacific Rehabilitation Conference. Rehabilitation: New Talent for the Community*. Hong Kong: Hong Kong Joint Council for the Physically and Mentally Disabled, 1969, pp. 231-234.
453. Van Gindertael, Jean-Michel. "Population and nutrition in the year 2000," *Social Welfare*, XV (April, 1968), 26-27, 31.
454. Varkhedkar, Vasant. "Bombay's bold bid," *Social Welfare*, XV (July, 1968), 7-9.
455. Varma, Paripurnanand. "Correct or convict," *Social Welfare*, XV (February, 1969), 3, 5-6.

456. Varma, Paripurnanand. "Crime situation in India," *Social Welfare*, XV (June, 1968), 7-8.
457. Varma, S. C. "Can probation do the trick? Home treatment for offenders," *Social Welfare*, XV (May, 1968), 7, 18.
458. Varma, S. C. "Probation needs wide involvement and deeper change in attitudes," *Social Welfare*, XVI (July, 1969), 11-12.
459. Varma, S. C. "A survey project: juvenile delinquency in Jaipur City," *Social Welfare*, XIV (October, 1967), 18-19.
460. Vedalankar, Ved Raj. "Lady Noyce Shool for Deaf and Dumb, Delhi: breaking the barriers of silence," *Social Welfare*, XIV (November, 1967), 22-23.
461. Venkataraman, R. "Planning for industrial development in India," *Asia*, No. 12 (Summer, 1968), 65-73.
462. Verma, Shobha and Agarwal, Lalit P. "Physical education and recreation for the blind," *Social Welfare*, XVI (May, 1969), 9-10.
463. Verma, Sitapati K. "Nandanwan School for Mentally Retarded Children, Nagpur," *Social Welfare*, XVI (August, 1969), 16-17, 24.
464. Vocational Rehabilitation Administration. U.S. Department of Health, Education, and Welfare. *Rehabilitation of the Disabled in Fifty-One Countries*. Washington, D.C.: U.S. Government Printing Office, 1964.
465. *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966. Also appears as a special issue of *The Journal of Rehabilitation in Asia*, VII (July, 1966).
466. Vyas, Rajendra T. "Nature and extent of the problem," In: Department of Social Welfare, Government of India. *Toward a Fuller Life*. Coimbatore: Government of India Press, 1967, pp. 13-16.
467. Vyas, Rajendra T. "Preparation and placement of the blind in normal employment." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 22-23.
468. Vyas, R. T. "The blind in India." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 3-6.
469. Wagle, M. M. *Immunization as a Very Important Measure of Child Welfare*. Mimeographed paper, 1967.
470. Ward, David J. "Physiotherapy and leprosy," *The Journal of Rehabilitation in Asia*, VIII (April, 1967), 35-38.

471. Wardekar, R. V. "Homes for healthy children of unhealthy patients (leprosy)," *The Journal of Rehabilitation in Asia*, IX (January, 1968), 13.
472. Wardekar, R. V. "Integration of leprosy work into general medical work." In: International Society for Rehabilitation of the Disabled. *4th Pan Pacific Rehabilitation Conference. Rehabilitation: New Talent for the Community*. Hong Kong: Hong Kong Joint Council for the Physically and Mentally Disabled, 1969, pp. 230-231.
473. Wardekar, R. V. "Rehabilitation of leprosy patients," *The Journal of Rehabilitation in Asia*, V (January, 1964), 37-46.
474. Wardekar, R. V. "Vocational rehabilitation and the use of normal facilities for the handicapped." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 67-69.
475. "Ways and Means: Unesco report on Asia," *The Times Educational Supplement*, April 14, 1967, p. 1250.
476. "We are caught in the coils of change," *Social Welfare*, XV (September, 1968), 18.
477. "White canes for the blind," *Social Welfare*, XV (April, 1968), 33.
478. Wilson, E. S. "Preparation of the leprosy patient for re-employment." In: *Vocational Rehabilitation of the Handicapped: a Report of Seminar, April 23-24, 1966, Poona*. Bombay: States' People Press, 1966, pp. 70-72.
479. Wilson, John. "Rural blind welfare." In: *The Second All India Conference for the Blind*. Bombay: The National Association for the Blind, 1959, pp. 93-97.
480. Wolf, James M. "Leprosy—impairment, disability, or handicap?," *Journal of Rehabilitation*, XXXII (July-August, 1966), 18-19.
481. Workshop for the Blind. *List of Firms Entrusting Sub-contracts to the Workshop for the Blind, Worli*. Bombay: Mimeographed pamphlet, no date.
482. World Commission on Research in Rehabilitation. *Final Report on Activities of VRA Project RD 536*. New York: International Society for Rehabilitation of the Disabled, 1966.
483. "World Day for the Disabled observed in India," *International Rehabilitation Review*, XIX (July, 1968), 23.
484. World Health Organization. Expert Committee on Leprosy. *WHO Technical Report No. 189, 1960*. Geneva: World Health Organization, 1960.

485. World Health Organization. *Technical Report Series No. 221. Scientific Meeting on Rehabilitation in Leprosy, Vellore, Madras State, India, 21-29 November 1960. Report.* Geneva: World Health Organization, 1961.
 486. "World Leprosy Day—1969," *The Journal of Rehabilitation in Asia*, X (January, 1969), 22-24.
 487. "X World Day of the Disabled," *The Journal of Rehabilitation in Asia*, X (July, 1969), 31-44.
 488. Yadav, R. S. "Deaf and their problems," *Social Welfare*, XV (February, 1969), 13-14.
 489. Yadav, R. S. "Psychology of the deaf," *Social Welfare*, XV (September, 1968), 15, 32.
 490. Yelaja, S. A. "Prevention of blindness," *The Journal of Rehabilitation in Asia*, IV (January, 1963), 35-37.
 491. Zaheer, Ali. "A step toward family welfare," *Social Welfare*, XV (January, 1969), 59.
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APPENDIX

Associations Concerned with the Handicapped

The following is only a partial list. The amount of information available concerning the organizations varies considerably.

All India Association on Mental Retardation, Chandigarh.

All India Convention of the Teachers of the Deaf. Headquarters in the Lady Noyce School for the Deaf and Dumb in New Delhi. Acts as a clearing house in all matters pertaining to teachers in this field, with financial assistance from the central government for specific projects.

All India Federation of the Deaf. Central office in New Delhi. Claims to be "the only All-India body of its kind serving the deaf community in various fields." General Secretary, D. K. Nandy.

All India Occupational Therapists' Association. Founded 1952; Mrs. Kamala Nimbkar president from 1952 to 1959.

Apang Manav Mandal (Crippled Association), Ahmedabad. Most members are handicapped, though many others are now included. Provides a sheltered workshop for crippled adults. Made a survey of the handicapped who came to a local hospital.

Association of the Physically Handicapped, Bangalore. Affiliate of the International Society for Rehabilitation of the Disabled. The Association recognizes that the term 'physically handicapped' can include every type of disability; it includes all persons who have either completely lost the use of or can make only limited use of one or more of their physical organs, and therefore it comprises chiefly crippled persons.

The Blind Men's Association.

The Blind Relief Association, Bombay.

Bombay City Council for Child Welfare.

Bombay Deaf and Dumb Society. The Hon. Secretary, I. B. Mehta, is also a member of the Maharashtra and Gujarat States' Advisory Councils for the Education of the Handicapped.

Bombay Society for the Vocational Rehabilitation of the Retarded

Central Society for the Education of the Deaf.

Children's Aid Society, Bombay. Founded in 1936. P. R. Bhatt has been connected with the society since that date, and served as its chairman 1947-1959.

Delhi Society for the Welfare of Mentally Retarded Children. A regional organization affiliated with the Federation for the Welfare of the Mentally Retarded. Organized the First All India Conference on Mental Retardation in New Delhi in November 1966.

Federation for the Welfare of the Mentally Retarded. Main office in New Delhi.

The Fellowship of the Physically Handicapped. Founded in 1955 by Mrs. Fathema Ismail, who is still president. Affiliated with the Federation Internationale des Mutilés des Invalides Civils, which has its headquarters in Rome, and which conceived the idea of a World Day for the Disabled. Public education is considered to be its main objective.

Gandhi Memorial Leprosy Foundation.

Hind Kusht Nivaran Sangh (All-India Leprosy Association). Has many branches; the Bombay branch has 15 members, of whom Mrs. Kamala Nimbkar is one.

Indian Guild for the Handicapped. Dr. Kaan Advani of this organization conducted a 1963-64 rural survey for the blind on a country-wide basis.

Indian Society for Rehabilitation of the Handicapped. Founded in 1961. Works with orthopedic surgeons all over the country. An affiliate of the International Federation for the Civilian Handicapped, it was formed by the Orthopedic Section of the Association of Surgeons of India (A.S.I.). This group in 1963 started a Week of the Handicapped by having a special radio program; out of this came the All-India Day for the Mentally Retarded. The organization is more truly an all-India association than the others.

Indian Speech and Hearing Association. Held its first annual conference in Calcutta in May 1968. Its purposes are to foster research, encourage the improvement of existing services, and disseminate information.

Maharashtra State Council on Blindness. According to the 1967 report of rehabilitation services in this state: "This autonomous organization counsels the state government concerning the prevention of blindness, and the medical treatment, welfare, and rehabilitation of the blind. It has also constructed a building at Worli to provide modern vocational training for blind adults."

National Association for the Blind. Headquarters in Bombay. Most important association working for the blind on a countrywide basis. Described in detail in text.

National Society for the Prevention of Blindness. Created as a separate group by the National Association for the Blind because of the importance of the problem. Headquarters in Delhi. A major func-

tion is public education concerning the causes of blindness and means of preventing them. (There are said to be 30 associations in India concentrating chiefly on the prevention of blindness.)

Society for the Education of the Handicapped (Child & Adult). Founded by Mrs. Fathema Ismail.

Society for the Rehabilitation of Crippled Children. Founded by Mrs Fathema Ismail in 1948. Functions primarily in Bombay. An affiliate of the International Society for Rehabilitation of the Disabled.

Society for the Welfare of Cripples, Calcutta. In 1960 started an employment register for the physically handicapped. Plans to start a sheltered workshop to be run by the disabled themselves as a pilot project to demonstrate their capacities.

Society for the Welfare of the Handicapped, Madras. Emphasis is primarily on the crippled. Opened a Recreation Centre for the Handicapped in Madras in October 1966.

Welfare Association for the Physically Handicapped, Calcutta. Held a symposium on training and employment of the blind in January 1967.

JOURNALS CONCERNED WITH THE HANDICAPPED

Blind Welfare. Published by the National Association for the Blind in Bombay in April, August, and December.

The Delhi Society for the Welfare of Mentally Retarded Children publishes two or three times a year a mimeographed bulletin for their members with a section in Hindi. Intended for parents, and very useful for this purpose. In January 1967 two other bulletins began to appear, one from Chandigarh under the All India Association on Mental Retardation and started by the staff of the teachers' training school there "which we trust will in due course amalgamate with the Indian Mental Retardation Digest edited by Fr. A. Malin of Nagpur for the recently formed Federation."

Fellowship. Publication of the Fellowship of the Physically Handicapped, with 500 subscribers. Quarterly.

Indian Journal of Mental Retardation. First issued in January 1968. To appear twice a year. Professional journal reporting research in the field.

Indian Journal of Occupational Therapy. Published by Mrs. Kamala Nimbkar for the All-India Occupational Therapy Association as a quarterly from 1955 to June 1959, when it was replaced by *Occupational Therapy and Rehabilitation in Asia*.

Indian Journal of Psychiatry. Official organ of the Indian Psychiatric Society. Appears irregularly. "Contains original articles on psychiatry, psychotherapy, psychiatric social work and other allied subjects by recognized experts in India and abroad."

Indian Journal of Psychology. Official organ of the Indian Psychological Association. Edited by S. Sinha in Calcutta. Quarterly. Occasional articles on tests and on attitudes which have some bearing on the handicapped.

Indian Mental Retardation Digest. Edited by A. Malin of Nagpur.

The Journal of Rehabilitation in Asia. Quarterly. First issue January 1961. Mrs. Kamala Nimbkar has continued to edit and publish this journal. Includes professional material for all categories of the handicapped. Was the first to include information on the mentally retarded. Publishes material from other countries in Asia but is worldwide in the scope of the information contained.

Mook Dhwani (Sound of Silence). Published bi-monthly in English by the All India Federation of the Deaf.

Occupational Therapy and Rehabilitation in Asia. Quarterly. First appeared in October 1959. The name was changed on the January 1961 issue as a result of a suggestion made by the seven members of the Editorial Board (mostly orthopedic surgeons) who attended the Eighth World Congress of the International Society for Rehabilitation of the Disabled (then the International Society for the Welfare of the Crippled) in New York in 1960. The journal then became *The Journal of Rehabilitation in Asia*.

Social Welfare. Published monthly by the Central Social Welfare Board in New Delhi. Concerned with all kinds of welfare problems, for both able-bodied and handicapped.

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